The OIL WEEKLY

OIL and GAS ENGINEERING

INTERNATIONAL AUTHORITY FOR THE PRODUCING AND PIPE LINE INDUSTRY

OIL & GAS APPLICATIONS

LOADING LINES

CHRISTMAS TREES

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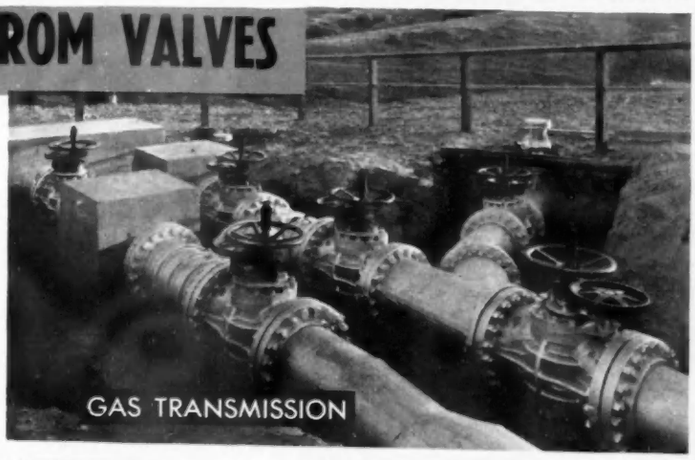
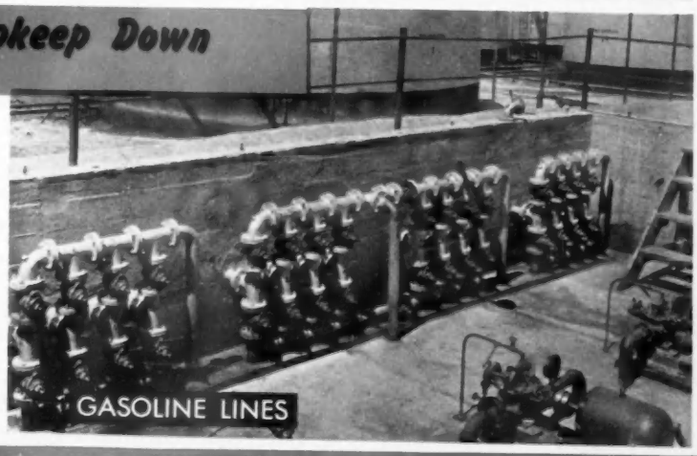

GAS TRANSMISSION

MUD LINES

Keep Upkeep Down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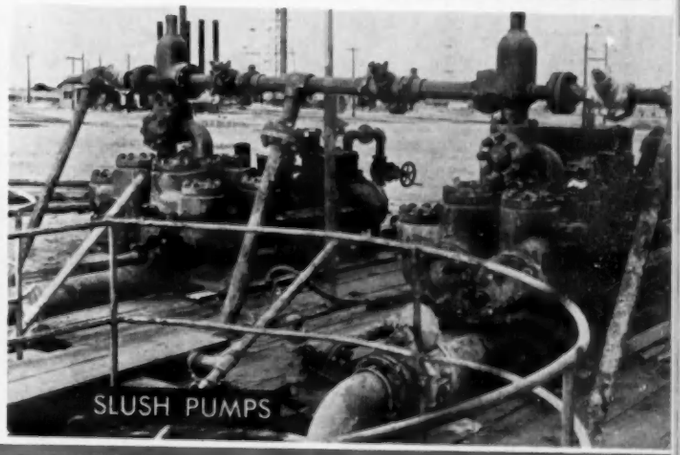
SLUSH PUMPS

LET'S MAKE 1944 THE YEAR OF VICTORIOUS ACHIEVEMENT

MORE PRODUCTION — MORE WAR BOND BUYING — ON TO VICTORY

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PETROLEUM REFINER and The REFINERY CATALOG for the refining-natural gasoline industry

LOOKING AHEAD
. . . with the Editor

THERE is the fight, you know, between proponents of the subsidy and proponents of the general price increase methods for handling the domestic crude-oil-shortage problem. A full understanding of the subsidy issue is of tremendous importance both to the petroleum industry and to the American free enterprise system in which oil has played a major role. So there cannot be too much discussion of the issues at stake right now in Washington where the administration apparently is loath to discard the subsidy plan as a solution to threatened inflation. Shoved down the oil industry's throat, the subsidy plan in the opinion of Joseph Gordon, former chief of the Economics and Supply Section of PAW, would bring some unhappy moments and situations. Mr. Gordon's succinct outline of the results which may be expected from the proposed subsidy plan will appear in an early issue of THE OIL WEEKLY and is deserving of careful reading and study by every thinking oil operator. And American.

THE OIL MAN'S CALENDAR

FEB. 20–24	American Institute of Mining and Metallurgical Engineers, Waldorf-Astoria, New York.
MAR. 21–23	American Association of Petroleum Geologists, Society of Exploration Geophysicists and Society of Economic Paleontologists and Mineralogists, Baker Hotel, Dallas.
APRIL 10–12	National Association of Corrosion Engineers, Annual Meeting, Rice Hotel, Houston.
24–25	National Oil Scouts and Landmen's Association, Hotel Adolphus, Dallas.
NOV. 13–16	American Petroleum Institute, Stevens Hotel, Chicago.

THE OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

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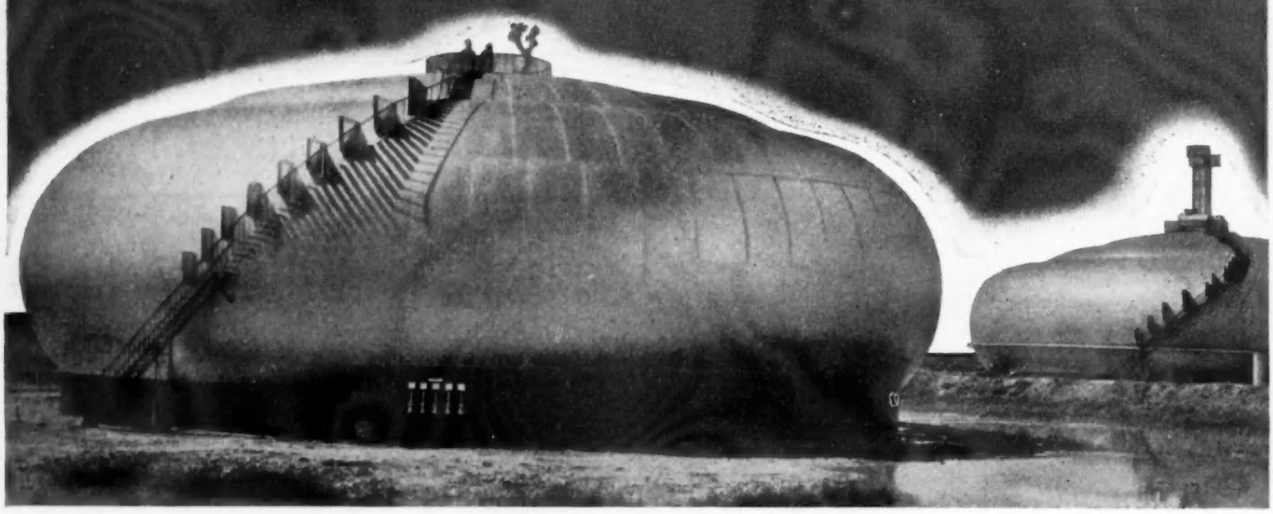
Aluminum Paint is BACK

FOR STORAGE TANKS



Recognizing the needs of industry, WPB has eased restrictions on aluminum paint. Under amended Order M-1-g, effective January 1, 1944, you are now free to use any quantity of aluminum paint you need on storage tanks to combat rust, reduce evaporation losses, lower maintenance costs. Just extend your priority rating to your supplier. Interior use is also permitted on surfaces and equipment exposed to excessive moisture, heat or fumes. Sealing of bituminous surfaces is another approved application.

For other uses, indoors or outdoors, special approval must be asked of WPB, Aluminum & Magnesium Section, Washington, D. C. Your application should state the quantity required, where it will be used and the reasons why aluminum paint is better than other paints for the purpose. Also, give your priority rating and the name of your paint supplier.

If you have any questions as to how the WPB order fits your particular case, or if you wish to have a copy of the official order, M-1-g, write ALUMINUM COMPANY OF AMERICA, 1949 Gulf Building, Pittsburgh, Pa.

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The Changing Panorama

Jet Planes May Cause Kerosine Comeback

LARGE-SCALE use of rocket or jet propulsion planes would remove some of the emphasis on high-octane gasoline for aviation requirements and kerosine likely would enter the picture as a suitable and available fuel.

Since internal combustion motors play no part in the operation of rocket planes, the most satisfactory fuel is one that is safe, non-corrosive, and capable of delivering the greatest amount of heat energy per pound of fuel load. Hydrogen would be an ideal substance from the standpoint of heat energy, but it is unstable and unsafe. Water-white, virgin-distilled kerosine seems to meet the all-around requirements better than any other fuel.

An increased demand for kerosine apparently would give the petroleum industry more flexibility in refinery product output at a time when it has reached a critical point in departing from balanced product manufacturing. However, this is only partly true. The supply of kerosine is very tight. Although production in recent months has been considerably above year-ago rates, stocks are declining. Only about 6 million barrels of kerosine are in storage in this country, which is about equal to a month's production. Therefore, increased demand for kerosine would not ease the problem confronting refiners.

Tank Car Situation Growing Critical

IF RAILROAD movement of petroleum is to continue at previous high levels, new cars will be needed together with better and more frequent repair of older ones and quicker handling.

Due to deterioration of tank cars, slowing down of rail movement and the necessity of diverting tank cars from East Coast service to other movements, deliveries to the Atlantic Seaboard have been falling off.

These cars are wearing out after two years of constant rolling. They have been used more continuously than ever before, they have been pulled along at record speeds and over vast distances. In some cases repair parts are available, but there has not been sufficient time to make anything but the absolutely essential repairs.

Meanwhile, it has become necessary to rob the East Coast service in favor of West Coast runs. All these factors combine to furnish a picture of a mounting tank car shortage in the months ahead, unless something effective is done to improve the situation.

Near East Expansion Is for Post War Use

PLANS for extensive development of oil resources in the Near East, with the United States financing most of the more than $100,000,000 that would be spent in building three refineries and approximately 3000 miles of pipe line, apparently have as their objective an increase in the oil that would be made available to European markets after the war.

No other explanation would be tenable, for from 18 months to two years would be required to complete the program after details of the plan are approved.

Shortage of Carbon Black Is Indicated

INDICATIONS are that there will be a shortage of carbon black in the United States by fall, which would retard the manufacture of automobile tires.

With synthetic rubber plants coming into operation on a large scale, there has been such a marked increase in carbon black demand that enlarged production is unable to keep pace with requirements. Carbon black is being produced at a rate of 1,200,000 pounds daily in this country, and this will shortly increase to 1,400,000 pounds, but stocks are decreasing approximately 25 million pounds per month. Current stocks amount to approximately 170 million pounds, so by fall a critical shortage is in prospect.

Some of the excessive stock withdrawal rate may be due to removal of storage supplies from carbon black plants to the new synthetic rubber tire plants, as manufacturers desire to build

PAW Dissolution May Be Sought

FEELING is growing that the need for widespread regulation of oil is passed, and that it would be beneficial if PAW were at least materially reduced in scope, if not dissolved. This matter is likely to break out into the open in the very near future.

Such thoughts are based upon numerous factors and beliefs, including:

1. The agency has served its purpose, accomplished about all it can. The critical period is over.

2. Increased exploration and drilling rates, urgently needed to improve the country's producing ability, would come more quickly if PAW regulations and red tape were removed.

3. With most of the country's fields producing at maximum rates, there is little need for control of production, and this phase could be turned back to state regulation.

4. With completion of the pipe-line program, transportation regulation need not be a function of PAW when other government agencies are working in the same sphere.

5. The refining program, including construction of aviation gasoline plants, has been pretty well completed, and PAW regulations are only adding confusion to refinery operation.

6. Even if not dissolved completely, a material curtailment of the number of people employed by PAW would release many highly trained and badly needed technical men to the industry, where they could do more good.

Also partly responsible, no doubt, for the wish or belief that PAW should be dissolved or at least materially reduced, is the growing fear of federal control, a matter that has caused greater anxiety in recent months because of mistrust of Ickes' ideas on foreign oil affairs. In addition to those within the industry who view this phase with deep concern, state regulatory officials also would like to get some of the oil affairs back in their hands.

At the most, a small nucleus of men could easily handle the petroleum industry matters that still need attention from time to time, it is argued.

up inventories at these new sites. There are no figures on quantities held by tire manufacturers, but it is generally agreed that the carbon black supply picture will become critical, particularly since synthetic rubber tires require larger quantities of this substance than did natural rubber tires.

Some new carbon black plants have been built, but consideration must be given to the construction of still additional plants.

First Synthetics to Be Poor Tires

SYNTHETIC rubber is now being produced in large quantity, and much of the supply is being made into automobile tires. Indications are that tires will become more plentiful, if the question of an adequate supply of carbon black can be solved before fall. However, it is probable that the synthetic rubber tires now being made will give relatively poor service, and condemnation of artificial rubber will result. This will be unfortunate, for the fault is not likely to lie with the synthetic rubber, but with the necessity of using old grades of carbon black in an effort to produce as many tires as possible.

To produce the best grade of synthetic rubber tires, a different grade of carbon black is required than that formerly mixed with natural rubber. But because of the shortage of carbon black, manufacturers are mixing old type carbon black with that newly processed.

More Cycling Plants Are to Be Built

BECAUSE cycling plants yield a high percentage of critical ingredients needed in making aviation gasoline and other war products that require light petroleum fractions, more of these plants will be built and there will be a general increase in the rate of developing fields that produce condensate. This will be especially true in Texas and Louisiana, principal sources of distillate production.

Currently there are 42 cycling plants in PAW District 3 producing about 65,000 barrels daily. With additional plants scheduled to be placed in operation, this district is expected to be producing 95,000 barrels of condensate products before fall.

A large number of exceptions to PAW well spacing regulations are likely, as fields are connected to cycling plants.

Ample Regions for More Oil in U. S.

THE United States cannot be written off as the world's leading oil producer. Half of the total area of the nation, approximately 1½ million square miles, is believed to be potentially oil bearing, according to a recent survey by geologists of Standard Oil Company (New Jersey). Only half of one percent of this vast territory is thus far known definitely to contain oil, and on 55 percent considerable exploration work remains to be done.

The reason: geologists have been concentrating on areas with most immediate promise of commercial production. Cream of the crop, they say, has probably been harvested. In the future, the industry shall have to work hard to produce, search more diligently, and drill deeper, but it does not seem unreasonable that great quantities of petroleum is yet to be found in the United States.

Ice on Great Lakes Is Broken Early

THE annual transportation bottleneck created on the Great Lakes by winter is being challenged six weeks or more ahead of normal this year, with the first run being made by an oil tanker from East Chicago to Milwaukee, on January 28. The trip was made by Traverse City Socony, carrying a full load of fuel oil and gasoline.

An abnormal spell of warm weather made it possible for this early trip. Opening of the Great Lakes would mean much to the steel and oil industries, and therefore, to the war effort. Most of the ore used in steel making traverses the Great Lakes, and it also is an important artery in oil transportation to the East Coast region.

Importance of Industry Shown for Students

THOSE of us, especially in the oil country, who can remember when our school texts dismissed oil and the oil industry with a picture of a Spindletop "gusher" with the caption "Under each derrick is an oil well" will be intrigued by a current effort in education of youngsters. Designed for students around twelve years old, The Coca-Cola Company is distributing a series of supplementary text books on American industries.

The material on oil consists of a series of pictures with appropriate and understandable text which traces oil from its pre-historic accumulation to the most modern refining still. In addition to pictures for display in the class room, each pupil is supplied with a book and set of pictures visualizing brief and understandable descriptions of each important phase of the industry.

Further, the whole is remarkable in that it overlooks the "romance" of oil and presents rather its wonders as a matter of interest to the students, and stresses the importance of petroleum in world economy. An accompanying manual for the teacher's guidance also is illuminating. Use of this material in the schools should go a long way toward getting for the oil industry a better public in the coming generation.

More Drill Pipe and Joints Being Made

A CRITICAL shortage of tool joints and drill pipe is reported by many operators and contractors, but due to the increased rate at which these items now are being manufactured it is hoped the situation will show improvement during the next few months.

During the first quarter of 1944 almost as much drill pipe will be manufactured as was made during all of 1943. Continued manufacturing at this accelerated rate would produce all the drill pipe domestic operators estimate will be needed during the first half of the year, according to PAW.

Frank Watts, PAW materials director, reports the backlog of tool joint orders has increased by approximately 12,000 during the last three weeks, from 183,300 to 195,200. However, the tool-joint situation is not as acute as this comparison indicates. Production has increased by 1500 per week during the past six weeks and is expected to increase by a like amount during the next six weeks.

Half a Million Planes by 1950

HALF a million airplanes will be flying the United States skyways by 1950, in the opinion of William A. M. Burden, special aviation assistant to the Secretary of Commerce. He estimated 441,000 privately owned planes, 50,000 military planes, and 9000 commercial transport planes will be in use. Mr. Burden urges immediate planning of huge and manifold airports that such numbers will require.

Inner Strings of Casing Pulled from Producing Wells for Salvage

California companies having success in recovery of much-needed pipe for new operations, work being done in active wells without damage to any of pay zones

IN CALIFORNIA, where setting multiple strings of casing was formerly customary practice in completing wells, considerable success is being had in pulling the inner string and thereby salvaging much casing for new operations. In one instance a recovery program started last year has already netted about 500,000 feet of casing, and from 40,000 to 50,000 feet are being reclaimed each month. From 93 to 97 percent of this pipe is usable. Where wells are still producing, the work is carried on without damage to any of the pay zones, nor are any of the formations exposed above the producing horizons below the shoe on the outside, or water string of pipe.

As a preliminary to the salvaging job, a survey is made to collect in one file the pertinent data on wells where it may be possible to remove part of the casing. Useful information is obtained from original well records in providing an up-to-date survey to show the exact condition of the holes.

The greatest footage of recoverable casing is of the older lap-weld type. However, some modern seamless pipe is being reclaimed, frequently in as good condition as when it was first run into the hole.

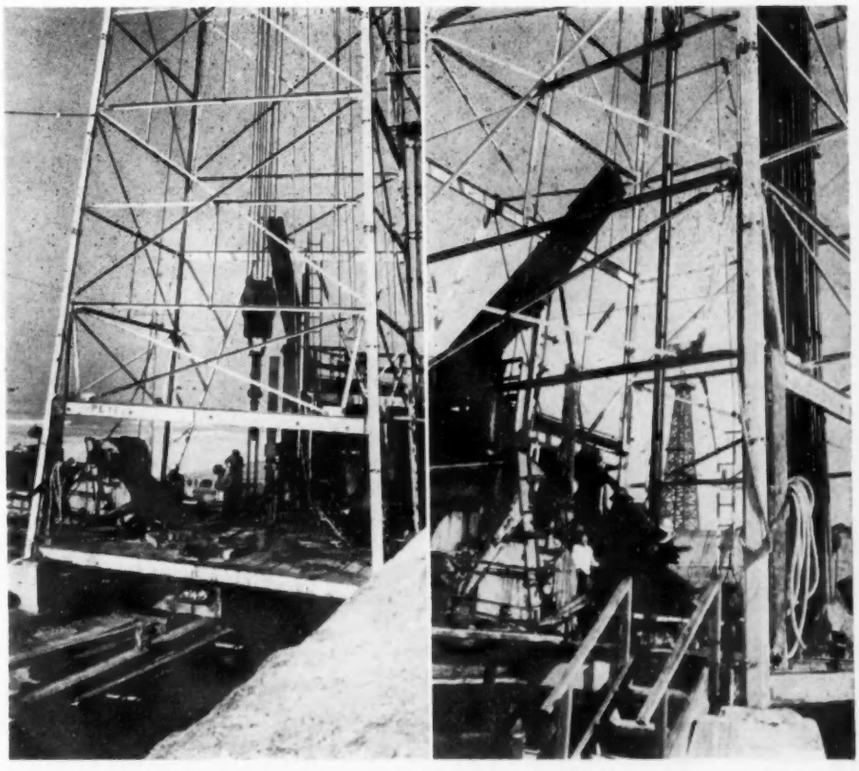
So far, this type of salvage work has been confined to inside locations where completion was at reasonably shallow depth.

Casing Recovery

The method of handling the casing-recovery program varies with different companies, but there is slight variation in the general procedure. Logs, drilling reports and the service or "case record" of wells are inspected thoroughly to determine sub-surface water conditions. Faulted areas are given extraordinary attention because of strain on the pipe caused by horizontal pressure from the formation. Pipe in good condition otherwise and free from cement may be "frozen" in the hole by earth settling until it cannot be pulled successfully. When inspecting the well records, it is determined at what level production has receded, in order to select those wells with the greatest amount of pipe available. Re-worked wells and those with bad records are discarded to eliminate as many difficult jobs as possible, and to effect the maximum footage recovery of pipe without damage to current production. When the wells have been selected, a job order is given to the department responsible for pulling the pipe, and the work proceeds.

The well is taken off production, the pumping unit disconnected, rods and tubing removed, and racked nearby. Then an instrument is run into the hole to determine wall thickness of the pipe to be pulled. If, as shown by this test, the pipe diameter has changed from corrosion, wear from cleaning out tools, running tubing, or from any other cause, further special consideration is given the well before going further with the job of removing the pipe, particularly if the well is still producing. On the other hand, if diameter changes are not considered sufficient to prevent the casing from being pulled, the work is continued.

Experience has shown that most of



(Left)—Shows pulling unit rigged up beside the derrick floor ready to remove tubing from well from which part of inside oil string is to be pulled. (Right)—Tubing out of the well, part of the casing coming out of hole.

the wear on casing is at the bottom where abrasion and other deterioration are most severe, especially if the hole was crooked to begin with. In such cases, the pipe is cut at a higher level, and only the good portion is pulled.

Surface Equipment

The actual process of pulling is determined largely by the surface equipment at the well. If there is a derrick capable of withstanding the strain incident to the pull, the pipe is removed with a portable hoisting unit. Pulling frequently is done by contract with organizations specializing in well service, on a turn-key basis. If no derrick is available, pulling is done with hydraulic jacks coupled with a gin pole for handling the individual joints.

Freeing Casing

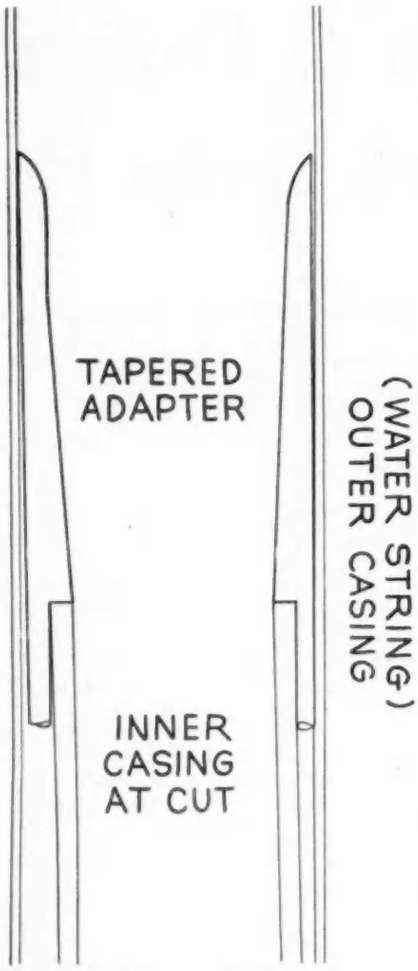
The casing is next unlanded and worked for awhile to determine the condition of the area between the pipe being pulled and the water string cemented in the hole. This procedure is considered important by some companies, since in many wells a greater amount of casing may be freed, with more ultimate recovery than if a predetermined cutting depth is set. After working the casing, actual cutting depth is determined by formula which is used in conjunction with a drilling-weight indicator. This formula is as follows:

$$L = \frac{S \times A \times E}{P}$$

with L — Free depth.
S — Stretch in inches.
E — 29,000,000 (modulus of elasticity).
A — Cross-sectional area in sq. ins.
P — Pull, in pounds.

One company using the formula has found that it invariably indicates the proper cutting depth. In some wells, especially crooked holes, where friction is caused by walls and collars rubbing against the outer string or from sand and debris in the annulus, errors may result in calculation by the formula. However, the formula is used in preference to any rule-of-thumb method in determining the cutting level.

Several types of casing cutters are used for cutting the pipe, some being driven by a small rotary table, and others by fluid. When fluid-type power is used, two sections of the machine are required: the pump and an oil motor. Both are connected with adequate high pressure hose and throttle-operated bypasses to control the speed of rotation. Before any type cutter is started, a collar locator is employed so that the cut in the pipe can be made a few feet above one of the collars. This collar acts as a stabilizer for the section immediately above and just below the cut.



Cutting Tool

The cutting tool is used with the string of tubing for the particular pumping well where the casing is being removed, and is set to cut the pipe at the indicated depth, plus or minus the location of the nearest collar. The exact point of the cut varies with the operator. In some instances a 20 or 30 feet overlay is left between the oil string and the water string. In other cases as much as 100 feet overlay is left. In all cases enough pipe remains in the hole to protect the formations and the producing zone from contamination by heaving sand, shale or other matter not desirable in a pumping well. Rotation speed of the cutting tool is from 8 to 15 rpm, with only enough weight applied to complete the cut, with a sharp face on the pipe.

Before hooking up the casing elevators, the next step depends upon the character of the well. Should there be fluid between the two strings of pipe with any appreciable amount of paraffin in the oil, hot oil frequently is circulated between the strings to prevent balling of the solids. Such balling action could easily collapse the pipe under a heavy pull. If, after hooking up, the pipe is obstinate from other reasons than paraffin, water or oil is run down between the pipe and then bailed out, to soften up solids and wash the annulus clean.

If the job proceeds regularly, without any trouble, the pipe is lifted from the hole, joint by joint, with specific care taken to see that collars, threads and the male end of the pipe are not damaged by sledging. Joints on which the inside-diameter instrument has been run are numbered as they are pulled from the hole so that the instrument log can be correlated with the record. Pipe with badly galled threads or damaged collars is culled from the racks and marked so it can be sent to the repair shops. Some companies make it a practice to truck all recovered casing directly to field shops where new threads are run and new collars attached where needed.

Adapter Inserted

After the pipe is removed from the hole, and before the tubing and rods are made up to start pumping again, an adapter is inserted in the well. This is similar to a drilling nipple and is made by cutting a taper inside from the top down. The base is cut to fit snugly, with very slight taper, over the end of the cut joint removed from the hole. Measuring the cut end of the last joint taken out of the hole gives the size of the end above the collar in the hole. The adapter has a slightly smaller outside diameter than the inside diameter of the water string remaining in the well, with just enough clearance to allow running the adapter in the hole. It is set on the squared end of the cut pipe and jarred gently over the pipe so that a smooth job is presented, which allows freedom of running tubing and rods, or clean-out tools.

After passing through the pipe shop, the casing is racked in the yard. Because of the difficulty in obtaining thread protectors, one company uses several layers of heavy building paper for wrapping the threads after they have been coated with a protective compound.

Most of this reclaimed pipe is used for medium depth producers where a high test pipe is not required. One company, however, drilled a well where 9400 feet of pipe was needed, and used 6900 feet of second-hand, 22½-pound pipe on top of 2500 feet of new pipe, and experienced no trouble from use of the reclaimed pipe. Frequently, the recovered pipe is graded down. If a light pipe is indicated, a heavier second-hand pipe is used. For example, a 26-pound pipe may be run where 22-pound is indicated.

Wildcatter Must Reckon With SEC

By WALTER E. HOPPER*

PAW hopes for 5000 wildcat wells in 1944. It has been reported by THE OIL WEEKLY that the greatest wildcatting program ever undertaken is about to start and that oil companies are making plans for a drilling and exploration program that attain the hopes of PAW. It is obvious that if new reserves are to be found wildcat wells will have to be drilled.

How many of the wildcat wells drilled during 1944 will be drilled by oil companies and how many will be drilled by the individual wildcatter is not known. It is well known, however, that some important oil and gas fields and much oil and gas have been found by the individual wildcatter, typically a venturesome man, thoroughly familiar with the drilling of wells but with a limitetd amount of money and with little or no legal advice.

Since the early days of the industry, the wildcatter has been known and recognized as an important factor in the business of finding oil and gas. For many years he has gone out into the sticks and blocked up a few thousand acres, by obligating himself to drill a well on the block. Usually by the time the block is assembled, what money he had has been spent and he, therefore, must obtain from someone else the cash and material necessary to drill the well. All that he has to offer in exchange for the necessary cash and material are the leases in his block, an interest in the well, or a participation in the oil or gas he hopes to produce from the acreage. Until 1933 the wildcatter was free to seek and obtain his necessary cash anywhere and from anyone. Today he cannot do this. He can still block up his acreage and finance the drilling of a well by selling acreage in his block and interests in the well, but the rules have been changed. In order to avoid trouble, he must operate under the existing rules and regulations. It is unfortunate that most of the individual wildcatters are not familiar with these rules and that many are also not aware that such rules and regulations exist.

On February 28, 1942, the Securities and Exchange Commission announced the filing of an action in the United States district court at Dallas, Texas, seeking to enjoin C. M. Joiner Leasing Corporation and C. M. Joiner, and John T. Johnson, individually and trading under the name of Miller Leasing Company, from selling securities in connection with assignments of oil and gas leases in the Joiner Paramount Development, located in McCulloch County, Texas, without a registration statement covering the securities being in effect under the Securities Act of 1933.

The district court denied relief and the Circuit Court of Appeals affirmed. Although both courts made findings of fraud, both courts refused injunction because, as the Court of Appeals stated, it could find simply sales and assignments of legal and legitimate oil and gas leases, that is, sales of interests in land. It was thought that these assignments could not be proved to be "securities" or "investment contracts" under the Securities Act of 1933. Since the matter presented a question important to the administration of the Securities Act, the Supreme Court of the United States granted certiorari. The opinion of the court was delivered by Justice Jackson on November 22, 1943.

Since the full opinion is rather long and in detail, the following statements are quoted from the opinion:

"Respondents and one Johnson, a defendant against whom a decree was taken by consent, engaged in a campaign to sell assignments of oil leases. The underlying leases, acreage from which was being sold, are not in the record. They required, as appears from the assignments, annual rental in case of delayed drilling of $1 per year. It also seems that these leases were granted by the land owners on an agreement that a test well would be drilled by the lessees. One Anthony blocked up leases on about 4700 acres of land in McCulloch County, Texas, in consideration of drilling a test well. Defendant Joiner testified that he acquired 3002 of these acres for 'practically nothing except to drill a well.' Anthony was a driller and agreed to do the drilling which the Joiner Company undertook to finance, expecting to raise most of the funds for this purpose from the resale of small parcels of acreage. The sales campaign was by mail addressed to upwards of 1000 prospects in widely scattered parts of the country and actual purchasers, about 50 in number, were located in at least 18 states and the District of Columbia. Leasehold subdivisions offered never exceeded 20 acres and usually covered 2½ to 5 acres. The prices ranged from $5 to $15 per acre. The largest single purchase shown by the record was $100, and the great majority of purchases amounted to $25 or less. All buyers were given the opportunity to pay these sums in installments, and some did so.

"The sales literature nowhere mentioned drilling conditions which the purchaser would meet or costs which he would incur if he attempted to develop his own acreage. On the other hand, it assured the prospect that the Joiner Company was engaged in and would complete the drilling of a test well so located as to test the oil-producing possibilities of the offered leaseholds . . . Other language in the advertising literature emphasized the character of the purchase as an investment and as a participation in an enterprise.

"Undisputed facts seem to us, however, to establish the conclusion that defendants were not, as a practical matter, offering naked leasehold rights. Had the offer mailed by defendants omitted the economic inducements of the proposed and promised exploration well, it would have been a quite different proposition. . . .

"Their proposition was to sell documents which offered the purchaser a chance, without undue delay or additional cost, of sharing in discovery values which might follow a current exploration enterprise. . . .

"But at any rate the acceptance of the offer . . . made a contract in which payments were timed and contingent upon completion of the well and therefore a form of investment contract in which the purchaser was paying both for a lease and for a development project.

"Nor can we agree with the court below that defendants' offerings were beyond the scope of the act because they offered leases and assignments which under Texas law conveyed interests in real estate."

Since it was the opinion of the court that the offerings of leases and assignments constituted a form of investment contract and were, therefore, securities, the judgment of the lower court was reversed.

Let us suppose that an individual wildcatter, with a block of acreage on a good-looking geological prospect in Texas, makes a trip to Oklahoma and then on to Illinois, for the purpose of raising money with which to drill a well on his block, by selling leases in his block; that, since all he wants is money with which to drill his well, he offers his leases to everyone and sells to all who have the money with which to buy. This man would be selling securities and would be subject to the rules and regulations of SEC.

The Securities Act of 1933 does not prevent anyone from blocking up a geological prospect and then financing the drilling of a test well by selling acreage in the block. The SEC does, however, have certain rules applicable to this type of exploration. Those engaged in this business should know the rules and regulations and should consider them as simply one of the many regulations under which business must be carried on at the present time.

*The author, a geologist and consultant, petroleum and natural gas, Tulsa, Okla., went to Washington, D. C., nine years ago as advisor on oil and gas to the Securities and Exchange Commission. He set up the oil and gas unit, and served as senior petroleum geologist and engineer in charge for a while, and then returned to the oil business.

Relaxation of Spacing Rules on Coastal Salt Domes Urged

Thorough development of production possibilities calls for action by PAW and would contribute mightily toward meeting demand for oil during 1944 to satisfy military requirements

By A. R. McTEE and RIVERS REAVES, Staff Writers

AS THE need for crude oil to meet military requirements becomes more pressing, the importance of increasing current production capacity overshadows all other problems facing the industry. Continuing the trend set several months ago, demand already exceeds available supply and will certainly go higher. Production rates certified by PAW for February are beyond the present daily average output of crude by 30,000 barrels.

Where to get this extra oil is the question. Obviously, widespread and random wildcatting is not the answer. Exploration in the sense of finding and developing new fields is a long-range proposition. It has been stated repeatedly during the past year that two years is the average time necessary to prospect for and develop new fields. Extensive wildcatting is needed to supply the oil that is required a year or two hence, but cannot be expected to result in any immediate enlarged production.

The only hope then is to concentrate development in proved areas where reserves are known to exist. There are many proved locations in the country that have not been drilled. It is known that oil exists below these locations. Through a program of intensive drilling in such areas the daily average yield undoubtedly can be stepped up considerably. Such development is the most economical possible in the use of manpower and materials. Also the cause of conservation and maximum ultimate recovery can best be served by drilling in districts where structural conditions are known. In such areas pioneering in geology and engineering has already been done so that attention can largely be devoted to actual production problems.

Quick Production Sought

Since Pearl Harbor, the wide-spacing regulations under which the industry has operated have precluded intensive development in proved fields. Now that the time has come when the quickest, surest and most economical way to increase daily producing ability is to permit the drilling of these proved locations, the question of spacing has to be dealt with at once.

Several modifications of PAO-11 have been made, but the changes so far are only a start. Last week Supplementary Order No. 10 relaxed restrictions on the use of critical materials in drilling operations in the so-called "Cincinnati Arch-Nashville Dome" embracing certain counties in Indiana, Ohio, Kentucky and Tennessee. In discussing the order, Deputy PAW Administrator Davies stated that "It is not expected that the additional productive capacity to be gained by the additional drilling under the new order will be large, but whatever added current production is obtained will help fill the pressing need for oil in the general area. It is because of this pressing need for oil that we wish to facilitate drilling in the area."

Additional Capacity Needed

Large additional productive capacity must be developed somewhere if the pressing need for crude continues. Since PAO-11 regulations are the hinge on which any important upward swing in production must depend, further relaxation of the orders have to be considered with a view to greater freedom in drilling. In all fields where large quantities of oil could be produced without damage to the producing formation if more wells were completed, these restrictions appear to have served their purpose and should be lifted, and control of drilling thrown back to state regulation bodies.

Of the areas in the United States where large undrilled proved reserves remain, the Gulf Coast ranks high. In this territory, economic factors favor drilling. Transportation facilities are usually present or are near enough so that providing outlets for crude is no problem.

Closer spacing of wells is necessary on salt domes, especially the piercement type, to develop thoroughly production possibilities. The nature of the producing horizons, segmentation of sands, multiple producing zones, with the surface pattern of lease ownership, combine to make each dome an individual unit calling for special treatment in well spacing. These factors also put the operator at great disadvantage in trying to develop salt-dome properties under present spacing regulations.

Sheet, or multiple reservoirs are found around many salt domes. These in reality are separate reservoirs, or separate pools, lying one under the other. In producing from these formations, the spacing of wells on top of the ground has no relation to the structure. Two wells might be side by side and be producing from distinctly separate zones, involving no violation of conservation principles whatever.

In the case of narrow bands of flank production such as is found around many of the domes, it is impossible to conform to the spacing regulations as they are now prescribed. As one operator put it, "when you step out you are likely to step off production altogether."

Geology Is Right

Geological conditions on the flanks of most salt domes make it important, from a conservation standpoint and proper drainage, to have closer spacing than in other structural type fields. There may be those who subscribe to the theory that dense spacing is not necessary, but the fact that some old wells in well-known coastal fields are still producing even though drilled on one-acre tracts is conclusive evidence that closer spacing is necessary to properly drain lenticular sands. Geological and engineering techniques indicate that from a conservation standpoint salt-dome wells should be spaced closer to recover all the oil.

In the opinion of leading oil-field engineers and petroleum geologists, the flanks of the many salt domes offer the best areas for immediate exploration if restrictions can be removed.

How extensive the salt-dome area is

■ CONTINUED ON PAGE 26

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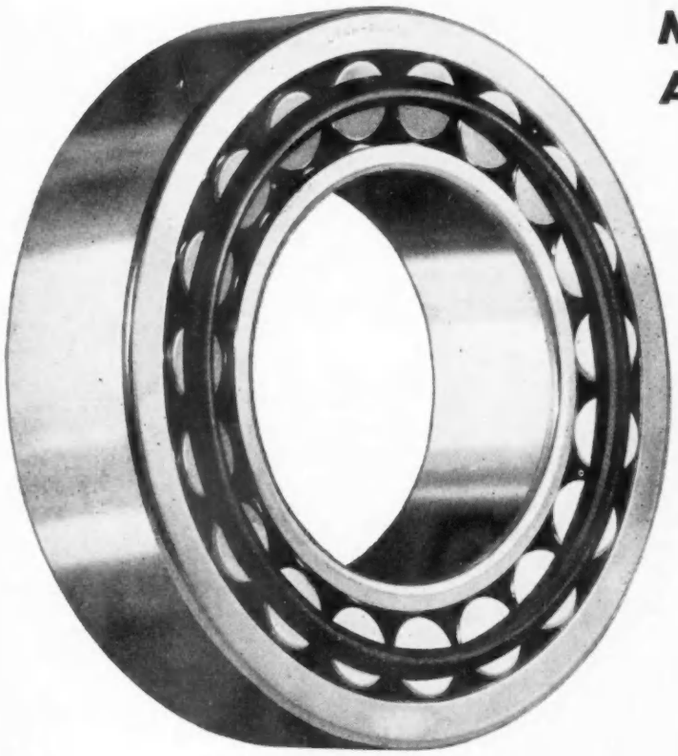

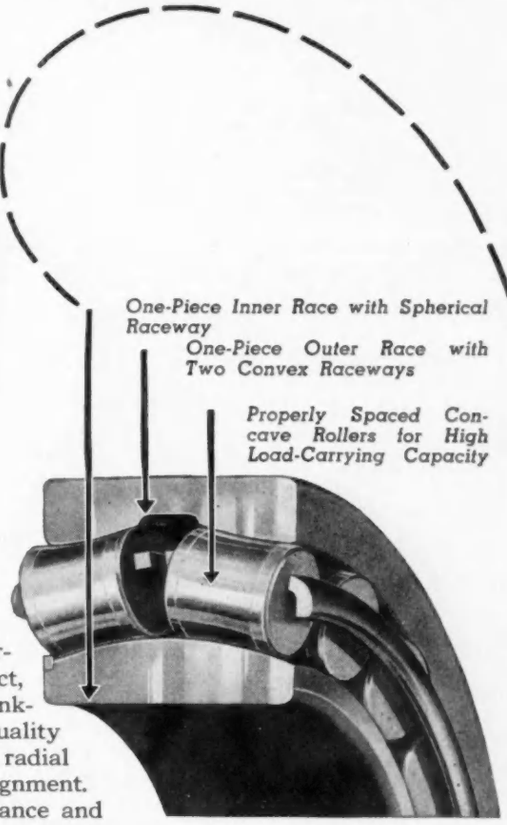
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PART II—RECOVERY MECHANISMS

(Continued)

From a report of Reservoir Development and Operation Committee of Standard Oil Company (New Jersey) Affiliated Companies and of Humble Oil & Refining Company

SECTION D

Practical and Economic Aspects of the Recovery Mechanisms

A BROAD comparison of the major operating characteristics of the three mechanisms shows that while highest oil recovery may usually be expected from water drive, it may often be at the expense of a relatively long depletion time. Dissolved gas drive is inherently the least efficient but also requires the least time, while gas cap drive usually falls between the other two drives in oil recovery and depletion time. The gas displacement mechanism probably covers the widest range of recovery and depletion time, since the recovery may range up to that of efficient water drive, if conditions are very favorable. Further, in the phase of this mechanism represented by pressure maintenance through gas return, the rate of withdrawal is subject to a measure of control without loss of efficiency because the volume of gas returned to the sand may be varied, within certain limits, to offset changes in withdrawal rates.

Efficient water drive and gas displacement retard decline of reservoir pressure and thus increase oil recovery and maintain natural flow. The degree to which this is accomplished, however, depends on the degree to which the efficient rate of production is approached. It is believed that in most oil fields utilizing these mechanisms, the slower the rate of production the greater is the possible ultimate yield of oil. Reduction in rate below a certain level, however, will result in only insignificant increase in yield, and it is customary, therefore, to refer to this level (or lower rates) as efficient. At rates of production above the "efficient" rate, ultimate yield may drop off rapidly with increase in rate. In purely dissolved gas drive, assuming that conditions preclude use of one of the other mechanisms, there is no efficient rate since the entire mechanism is governed by the original characteristics of the sand and fluids. Except in unusual circumstances, however, a reservoir will seldom be inherently limited to this type of drive, and restriction of withdrawal rate will permit utilization, to at least some degree, of one of the other more efficient drives.

Influence of Sand and Oil Characteristics on Recovery Expectancy in Practice

In the preceding sections, the importance of the physical characteristics of the reservoir sand and reservoir fluids, as they bear on practical oil recovery expectancy, has been mentioned and this can hardly be too greatly stressed. Factors such as porosity, interstitial water content, and shrinkage of the oil from reservoir to surface conditions govern the amount of surface oil originally in place, but permeability and uniformity of the sand and viscosity of reservoir oil probably play the greatest part in determining the economic ultimate recovery, as compared with the theoretical ultimate, which may be looked for in practice.

Since sand permeability is a basic factor influencing rate of fluid movement, the entire recovery process is retarded by low permeability. In some instances, this may preclude the feasibility of utilizing efficient gas cap or water drive, both of which require a measure of control and restriction of withdrawal rates. In very tight sands, an effort to restrict withdrawals may place a field in such a low rate, long depletion time category as to make it non-commercial. To produce at a commercial rate in such case would result in a major portion of the oil recovery down to the stripper stage being obtained by dissolved gas drive and the ultimate recovery, assuming that a very slow water advance were present, would depend largely on the feasibility of continued operation under stripper conditions.

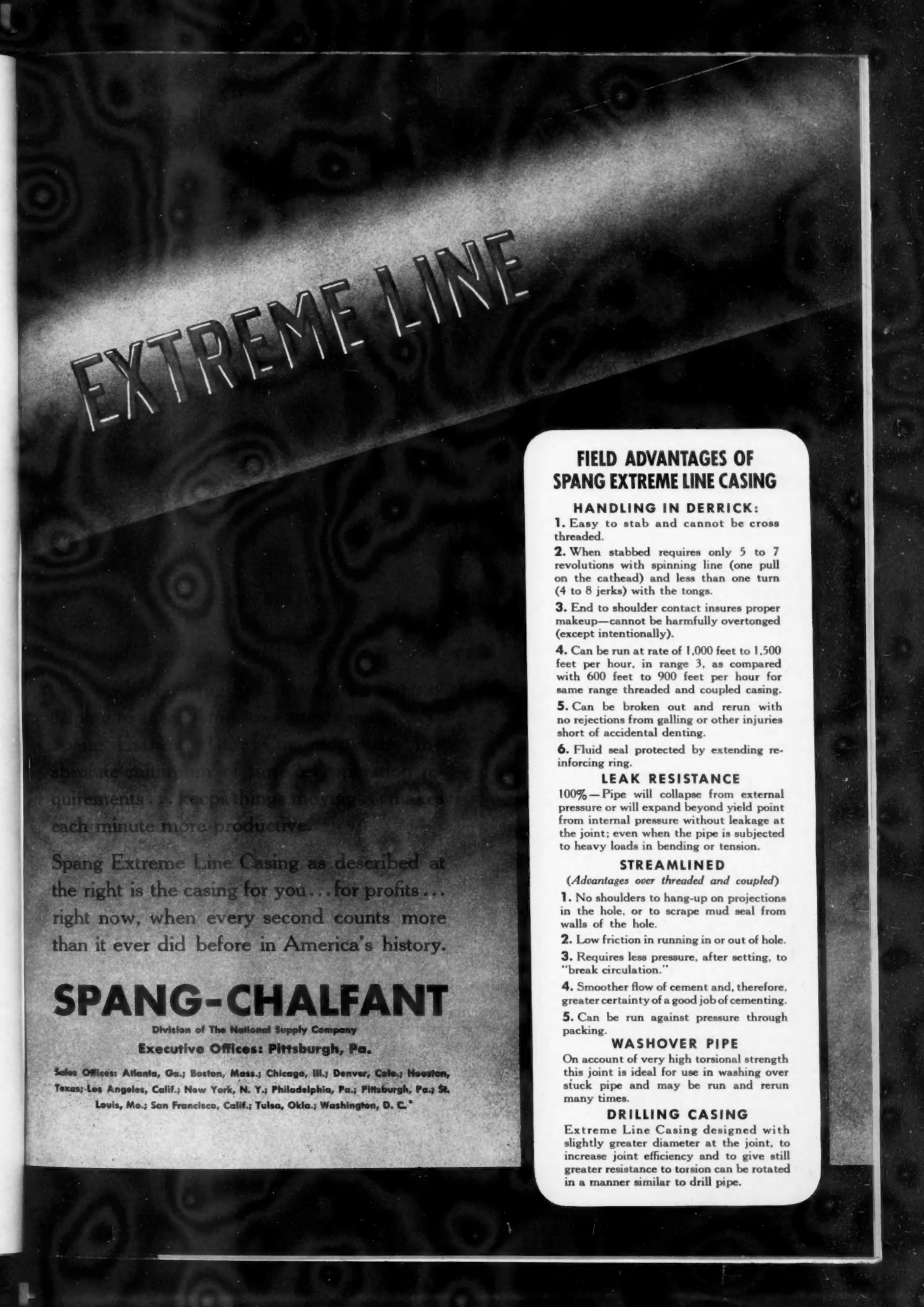
A similar effect is introduced by high viscosity of reservoir fluid. Small changes in the low range of viscosity, such as are commonly encountered with oils of medium and high API gravity, are not important, but where the viscosity of the reservoir oil is high it has a very marked retarding effect upon the entire oil recovery process and also results in a greater tendency to by-passing of oil by gas and water.

The disadvantages of low sand permeability will partially be offset by low oil viscosity, whereas the advantageous characteristics of sands of high permeability may effectively be reduced if the oil contained therein is of very high viscosity. It is, incidentally, this situation which is largely responsible for the oft-noted condition in reservoirs having very tight sand or heavy oil that extremely long producing life, often as much as 100 years or so, is necessary for the recovery of a reasonably high percentage of oil in place.

Sand Characteristics

Sand irregularity is, in practice, of equal or greater importance than the specific or average value of the permeability, since the wide variation in sand characteristics usually encountered in reservoirs is conducive to channeling and by-passing of oil by free gas or water. Such by-passing, if not carefully controlled, may seriously reduce the ultimate oil yield from a reservoir, substantial quantities of oil being left behind by irregular gas or water movement. It will be appreciated that the permeable sand members will be depleted first, since the normal course of free gas or water advance would be to move preferentially through the more permeable streaks of sand, leaving the tight sand strata poorly flushed out. Under such conditions, it may be only by long continued stripper operation that such tight streaks will be depleted of their recoverable oil, and if this is not feasible, a substantial loss in oil recovery will result.

This factor is particularly important



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in gas cap and water drive and is one of the reasons why varying degrees of restriction on withdrawal rates are usually required in these mechanisms. The controlled rates reduce the by-passing tendency under irregular sand conditions and cause more even and thorough displacement of oil from all sands simultaneously. Artificial or mechanical control measures are of assistance in this regard, and such measures as use of packers or blank pipe and careful plug-back work will often shut off a sand stratum which has been substantially depleted of its oil and taken over by free gas or water.

As one phase of the sand irregularity problem, it will be appreciated that in fields having several distinct oil zones it is more efficient to have no more than one zone open to production in a single well, since this makes possible the use of control and operating practices best adapted to each reservoir. This may not always be feasible economically, and in some instances the multiple zone completion technique, involving use of pack-offs to permit flow of two or more zones separately through the tubing and annular space between tubing and casing, or the use of dual tubing strings, may afford an approach to the separate control ideal.

Economic Balance on Recovery Mechanisms

The foregoing practical barriers to ideal working of any recovery mechanism, imposed by the sand and fluid conditions existing in natural reservoirs, are of major importance in determining the broad economic limitations within which any specific field must be operated and, in the light of these limitations, the type of drive and the oil recovery which may reasonably be expected. While each area and field will require individual economic analysis due to widely varying operating conditions, oil value, cost, and related factors, a few broad economic comparisons may be reviewed with interest.

As remarked earlier, with unfavorable field characteristics it may be impractical to attempt utilization of water drive to a high degree, or efficient gas cap displacement, simply because to do so would require certain restrictions and practices which would lead to excessive operating costs and thus result in the field being rendered non-commercial and unable to compete with other sources of supply. On the other hand, where physical and economic conditions are reasonably favorable, the high ultimate recovery which may be secured by efficient control is usually much more than sufficient to offset the slower monetary return involved by such control. Further, the savings in lifting costs resulting from more natural flow production under efficient operating practices will also be of substantial economic importance.

A specific comparison of the various factors involved in the choice of practical operating methods may be found in considering some aspects of the frequently arising question concerning the need for or advantages of gas injection. It will be recalled that possible yield under gas cap drive covers a wide range depending on sand and fluid characteristics, structure and sand continuity, pressure differentials to be employed, and so on. If a field under consideration had a comparatively tight sand or contained very viscous oil, and little or no structure were present, it could be anticipated that the difficulty with the control of gas movement in the reservoir would be so great as to involve much recycling, should pressure maintenance by gas return be attempted. In such case, the latter operation may not be advisable economically, due to extensive recycling of input gas, even though somewhat greater oil recovery may be obtained. Unless sand and general reservoir conditions are conducive to vertical segregation of oil and gas, the mechanism may revert to a substantially horizontal gas drive in which, while some increase of oil recovery over that obtainable under dissolved gas drive may be expected, considerable trouble with increasing gas-oil ratios due to by-passing and channeling may occur. Also, in many cases, it is possible that reasonably careful control of withdrawals would permit sufficient water influx, looking at overall field life, to yield substantially all the increase in oil recovery which could be obtained by an inefficient gas return project.

Program of Open Flow

Where there is considerable structural relief and very permeable sand, so that a high degree of gravitational segregation of oil and gas could be expected, the weighing of gas injection would have to be based on a somewhat different comparison. Under such a condition, and assuming absence of an effective water drive, a program of wide-open flow and waste of gas would result in early depletion of pressure and rapid decline of per well rates of production to low levels when but a low percentage recovery had been realized, say perhaps 30 percent of the oil in place. With sand sufficiently permeable, however, there may be considerable gravity drainage of oil to the lower portions of the structure from which it could be recovered by pumping under stripper conditions for an indefinite period of time, with consequent increase in economic ultimate yield, but not reaching more than perhaps 50 percent of oil in place, even under the most favorable conditions. In contrast with this, the same field under full pressure maintenance by gas return and efficient control could be produced substantially by natural flow throughout its entire life, with attendant saving in lifting costs, and could be expected to yield 70 percent to 80 percent of oil in place.

A somewhat similar picture may be drawn up for the economic comparison of results of operating practices in a water drive field. For example, consider such a field with characteristics indicating that a restriction in rate equivalent to, say, 40-year life would be required for full high pressure water displacement. If this rate be followed, an ultimate yield of up to 80 percent of oil in place may be feasible with a large percentage obtained by natural flow and relatively slow rate of increase in water production, both of the latter favoring low overall lifting costs. On the other hand, under high rates of production, this same field would experience rapid pressure decline, with artificial lift a necessity when only a small portion of the oil in place had been produced, and a rapid increase in water production would occur due to channeling, with attendant high lifting cost. The ultimate recovery obtainable would then depend largely on the amount of oil lost by by-passing and on how long it would be feasible to continue operations under semi-stripper conditions. Except under very unusual circumstances, it could be expected that recovery would not reach more than perhaps two thirds of that under efficient operation, or from 50 percent to 60 percent of oil in place. This is assuming a very good partial or delayed water advance. Under unfavorable conditions the recovery would be even lower due to predominance of dissolved gas drive during the economic life of the field.

Criteria of Reservoir Efficiency

Considering the various conditions and factors involved in the three recovery mechanisms, a number of broad principles or criteria of reservoir efficiency may be set forth through which it is possible to judge, in general terms, the relative operating efficiency and broad recovery expectancy of oil reservoirs. These factors are:

(a) **Pressure:** Pressure may be an indirect index to recovery efficiency in that the record of reservoir pressure may show which of the several possible production mechanisms is operative. For example, maintenance of high reservoir pressure is usually an indication that one of the displacement mechanisms is operative, whereas a rapid decline of pressure is usually indicative of the

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operation of dissolved gas drive. The pressure itself is not an index of efficiency, however, and it is necessary to study the actual operation of the field and the effectiveness of the displacing water or gas to arrive at a true evaluation of the operating practices. Thus, a field with a large gas cap may have its pressure sustained by a water drive, but if gas is dissipated from the cap, oil may be driven thereinto with resultant loss in oil recovery.

The higher the pressure, the more will the reservoir oil retain its desirable original physical characteristics with consequent beneficial effect on the entire recovery process. Retention of high pressure may be of particular importance in certain types of reservoirs where paraffin or other solids may deposit in the sand or tubing as pressure is reduced and gas is released from solution. High pressure reduces the troubles from this source, and if pressure is maintained sufficiently high it is ofen possible to obviate such trouble completely. This factor may have important bearing not only on the lifting and operating costs but also upon the economic ultimate oil recovery, since deposition of solids in the sand may effectively plug the pores and bring the producing rates of the wells below the economic limit before the full recovery expectancy has been obtained.

Second Deduction

(b) **Restricted Withdrawal:** A second deduction from principles of reservoir behavior is that restriction of withdrawal rates below wide-open flow will enable the desired displacement processes and gravitational segregation of fluids to take place more efficiently and thus yield higher oil recovery than would otherwise be obtained. The only exception to this general rule, in the light of present evidence, is the case of dissolved gas drive and, as has been pointed out, it is seldom found that a reservoir is inherently limited to this recovery mechanism. In nearly all cases, the degree to which one or the other of the displacement processes may come into play or to which gravitational segregation may take place is more or less directly proportional to the degree of restriction of withdrawal rate.

In practice there is, of course, a maximum to which the degree of restriction can be carried, since unlimited time cannot be allowed for the depletion period. As was pointed out in a preceding section, however, in many present water drive reservoirs with good sand and fluid characteristics, a close approach to maximum recovery efficiency under water drive is apparently being obtained with the restriction of rates only to a point where annual withdrawals represent from 3 percent to 5 percent of ultimate yield. Total depletion time for maximum recovery in such cases may run to, perhaps, some 40 to 50 years, after allowing for the decline of pressure and the gradual increase in water content of produced fluid which is to be expected. If such fields be regarded as a basis for comparison, it may be seen that less favorable sand or fluid conditions would reduce the efficient rate to the point where it may not be practical so to restrict a reservoir as to obtain the high recovery efficiency afforded by full water drive.

Similarly, in gas cap displacement, a measure of restriction is required to control gas movement, the degree of restriction depending on the character of the reservoir. Note, however, that the restriction required in this mechanism may not be as severe as in water drive, and where gas is returned to the sand, the volumetric replacement effect thereof, and hence the efficient oil withdrawal rate, is subject to some control through variation in volume of gas injected.

(c) **Gas and Water Conservation:** Conservation of gas and water within the reservoir is indicated as one means of increasing recovery efficiency. By such measures the volumetric rate of withdrawal of fluid from the reservoir is reduced, with beneficial effects on trend of reservoir pressure and rate of fluid movement in the reservoir.

If gas conservation is carried out to a sufficient extent, a free gas cap can often be created, where one did not exist originally, by permitting gravitational segregation of oil and gas within the reservoir, with the resultant advantage of introduction of the gas displacement mechanism where dissolved gas drive may otherwise be approached as the major recovery mechanism. Return of gas to the reservoir is, of course, a phase of gas conservation. Where this operation involves injection of gas at the crest of a structure, the resultant maintenance of a gas cap under high pressure will perhaps represent the acme of gas conservation with full realization of attendant high oil recovery, natural flow production and reduced depletion time. Return of water to the downstructure portions of a reservoir also may aid maintenance of pressure by reducing net fluid withdrawals.

Relates to Gas Conservation

The influence of water drive supplementing the gas displacement process as a major recovery mechanism must be considered, and this possibility relates to gas conservation in two ways. The first is that gas conservation, with or without gas return, reduces the total withdrawal rate and thus permits a water drive to maintain pressure to a greater degree and to advance more evenly; the second, and one very important in many fields having both water drive and a large original gas cap, is the fact that if free gas is produced from the gas cap there is a high probability that the oil will move into those portions of the reservoir originally occupied by free gas with probable appreciable loss of ultimate oil recovery.

This loss develops as one phase of capillary action.

The oil saturation in the originally free gas sand is usually very low, and if oil is permitted to enter these sands the saturation relationship required to satisfy the forces of capillarity will cause the sand to adsorb a certain portion of the oil entering therein. This portion becomes unrecoverable for practical purposes. This oil loss in free gas sand is believed to be of considerable potential importance in fields of large original gas caps, and there are indications that the amount of oil so retained by gas sand may amount to 15 percent to 20 percent of that moving into such sand.

Two Groups of Wells

(d) **Well Efficiency:** This term is usually employed in discussion of individual well behavior as it may bear on the broader question of overall reservoir behavior. It can be seen that well efficiency is simply one phase of the problem of reservoir efficiency previously discussed, the individual wells being merely the outlets through which fluid is produced and the reservoir as a whole is controlled.

Basically, the question of well efficiency or control reduces to the problem of so distributing total field producing rate among the various wells as to (1) afford proper regulation of gas and water movement, (2) avoid uneven or irregular pressures throughout the reservoir, and (3) avoid the creation of any localized conditions which could result in reduced ultimate oil recovery. For practical purposes in discussion of this question, wells may be divided into two broad groups, one embracing those wells near free gas or water contacts and the second covering wells more or less far removed from such contacts.

The principal factors determining well efficiency in the first group are the avoidance of producing practices which encourage channeling or by-passing of either gas or water. If the desired even and regular advance of water in a water drive field, or the even and regular expansion of a free gas cap, are to be obtained, the nearby producing wells must be sufficiently restricted as to avoid the creation of local low pressure

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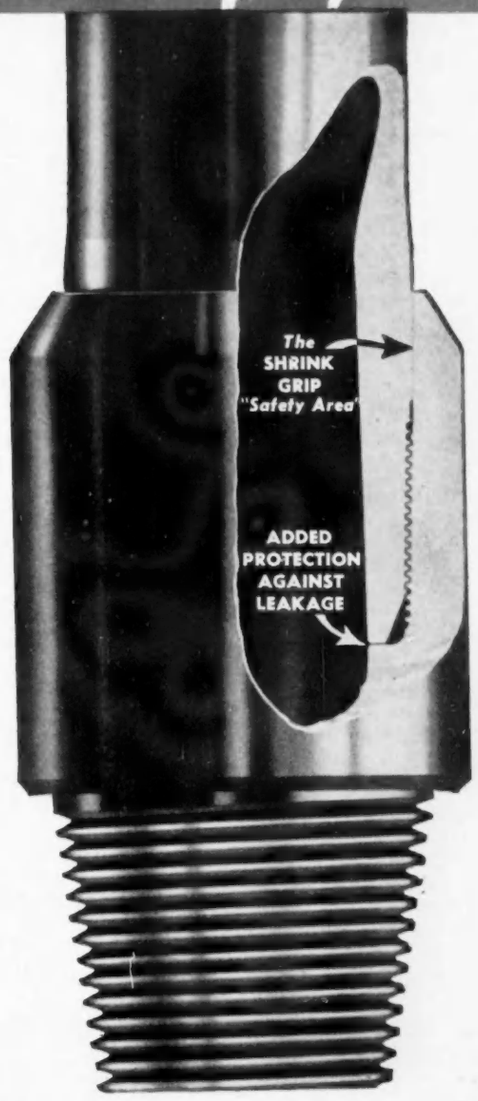
Hand application means a material saving in transportation costs. shut-down time and machine bucking-on costs.

And in addition to this saving you get the Shrink-Grip safety features plus an added seal which protects the drill pipe threads from leakage and failure.

Replacing Super Shrink-Grip tool joints is a simple and easy operation Just cut off the old tool joints, heat the new tool joints and screw them onto the drill pipe by hand The double seal protects the pipe threads and rethreading is not necessary.

Add these money-saving features to your 1944 expenditures and specify Reed Super Shrink-Grip Tool Joints on your next string of pipe.



When replacements are necessary...

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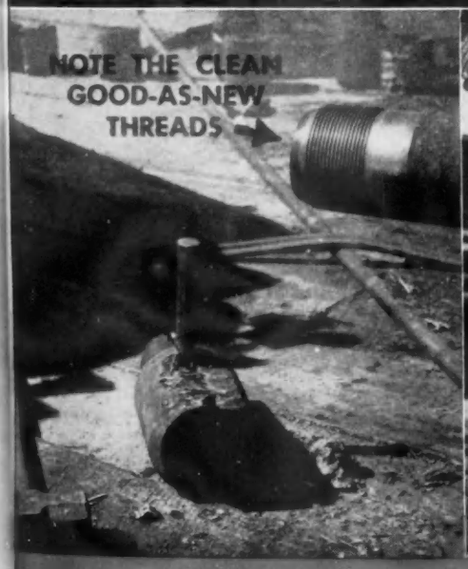

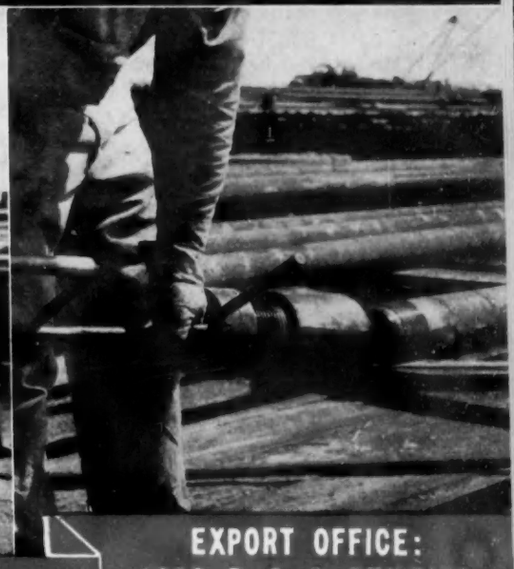

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areas. Broadly included in this picture are adequate workover programs to shut off free gas or water which may have channeled to a well or may have otherwise taken over a portion of the exposed sand section.

Wells in the second group, that is, those wells not adjacent to free gas or water, are not directly concerned with irregular encroachment of these fluids, but they nonetheless require proper control to avoid creation of undesirable conditions in the areas they drain. For example, irregular or uneven pressures can be created throughout a reservoir by excessive per well withdrawals leading to the creation of local dissolved gas drive conditions.

Many wells in this second group have a minimum gas-oil ratio at a rate of oil production lying somewhere between severe restriction and high rate of oil flow. It is often customary, when pressure irregularities are not a factor, to regard the minimum ratio point as the most efficient well rate, on the assumption that the principles of gas conservation are thus best served. This assumption is believed satisfactory, except where the oil producing rate for minimum ratio is so high as to involve high bottom-hole flowing pressure differentials with attendant danger of inducing a low pressure condition and high gas saturation around the well. In such cases, it is believed preferable to set well rates on the basis of reasonable pressure differentials, even though a somewhat higher ratio may temporarily ensue.

No Exact Differential

In wells which do not have this minimum ratio characteristic, pressure differential will, of course, also be one index in determining the most satisfactory producing rate. Well and reservoir conditions vary so widely that no exact figure on "reasonable" differential can be set down as applicable to all cases, but in many instances differentials up to 100 pounds per square inch or so would not be considered excessive. It is obvious, of course, that in inferior sands differentials much higher than this may be required to obtain commercial production. In such cases it may not be practical to follow closely the ideals of high efficiency if economically sound operations are to be carried on. Finally, it is to be borne in mind that regardless of how the problem of individual well efficiency is approached, and the optimum per well rates determined, the resultant total field rate of withdrawal cannot exceed the level of optimum efficiency for the field as a whole without danger of loss in oil recovery.

Another installment of this report will appear in the next issue of THE OIL WEEKLY.

Relaxation of Spacing Rules

• CONTINUED FROM PAGE 14

may not be widely realized. There are known salt domes from the Rio Grande to the Mississippi River, but the largest concentration of these domes is on the Texas Gulf Coast which includes 27 counties and comprises an area amounting to approximately 23,000 square miles. Most of the domes have been checked and re-checked with standard geophysical methods and are well defined.

The general structure of this particular district is monoclinal with the formations dipping south and southeastward toward the Gulf of Mexico. Production from this district has largely been obtained from true salt-dome fields, or from fields in which deeply buried salt masses elevated upper strata into structural traps suitable for the accumulation of oil and gas. The campaign of intensive development following the discovery of Spindletop in 1901 was carried on by hundreds of individuals and newly organized companies. Dozens of salt domes were discovered in this period, some of which yielded varying amounts of oil from cap rocks and some of which were dry.

It is that group of salt domes that have produced either a large or small amount of oil from the cap rock and which has not been explored thoroughly on the flanks that probably hold billions of barrels of oil.

The Sour Lake field in Hardin County, which had been producing small quantities of oil for several years, began to attract attention in 1901 when the J. M. Guffey Company drilled a well that made spasmodic flows of loose sand and mud accompanied by some oil and gas from a depth of 900 feet. This dome has had several revivals and has yielded a cumulative production of approximately 81,000,000 barrels since its discovery. The ultimate production is being increased by wildcats and outposts that are being drilled presently and are establishing new pay horizons and adding heretofore unproven acreage to the field.

There have been certain peacetime factors that prevented the orderly development of salt-dome flanks. They were: (1) no immediate need for the oil; (2) extraordinarily expensive drilling due to the peculiarities of dome flanks; (3) company ownership of lands in fee or mineral fee.

These conditions have been cast aside for the present due to the immediate need for new sources of oil. With the removal of spacing regulations, it is certain that much new drilling would be undertaken.

Most of the acreage around the edges of salt masses, particularly the older ones, has been owned for years by oil companies who look upon the holdings as undrilled reserves—a contingency for the future. Most of the land ownerships are small and therefore expensive to get in shape legally before drilling is started.

Many operators previously looked with disfavor upon flank drilling because of the heavy expense usually involved, even though it is recognized that production if found is generally prolific. There are cases where as many as 20 wells were drilled on the flanks of salt plugs before large amounts of new oil were found.

One example of a large dome where extensive reserves have been found is Pine Prairie, Evangeline Parish, South Louisiana. The dome was discovered in 1908, and produced small amounts of oil between 1912 and 1918. It was not until April, 1941, that Yegua production was established on the flank. The field has been slowly but safely developed, yielding production from the Yegua, Sparta and Wilcox sections and having a reserve upwards of 50,000,000 barrels or more. Hundreds of acres remain to be drilled and the area has not been defined on all sides.

There are approximately 200 salt domes on the Texas-Louisiana coast alone, not considering Lower Texas coast and Southwest Texas. Some of these domes are prolific oil producers, while many have not been explored to any large degree.

The Humble dome in Harris County, Texas Gulf Coast, was discovered in 1905 and has produced approximately 128,000,000 barrels of oil. The recovery per acre has been slightly more than 158,000 barrels. Despite the age and high recovery, flank sands were opened on the east side of the field in late 1943, are being developed and may increase the ultimate yield considerably.

Within the past four years the Hull field in Liberty County, Texas Gulf Coast, has seen a revival of drilling and new-pay discoveries, although it was discovered in 1918 and has produced around 100,000,000 barrels and still has a reserve of approximately 60,000,000 barrels.

The West Columbia field in Brazoria County, Texas, was discovered in 1915 and had a major revival years ago. It has produced around 95,000,000 barrels of oil, and recent drilling and extensions have added appreciably to the field's ultimate output.

If restrictions on drilling can be lifted there undoubtedly will be an increase of development on dome flanks, and history will repeat itself with important new discoveries.

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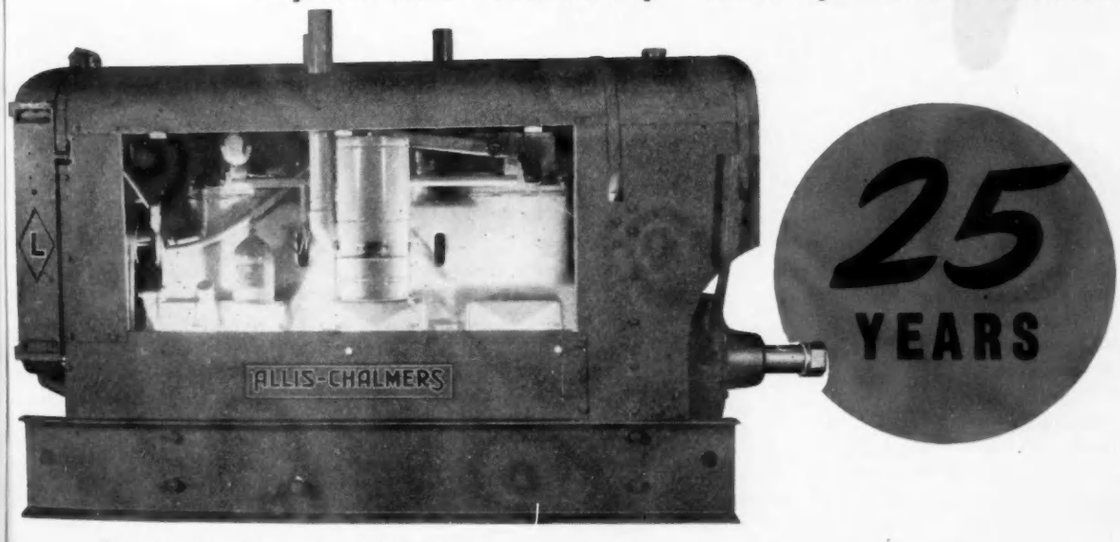
Yes, we are going to do everything possible to furnish a sufficient number of Allis-Chalmers Power Units for the oil industry — and for the oil industry only.

In 1943 in the face of seemingly insurmountable difficulties we were able to supply a large percent of the demand for A-C Power Units, mainly because our original decision was that by serving the oil industry we could contribute most to the war effort.

This year, with many manufacturing problems solved, we anticipate being able to deliver A-C Units in increasing numbers to those who are producing oil for Victory.

Remember A-C Units are backed by more than 100 years of experience in manufacturing engines for industry.

Try A-C First for: Delivery — Economy — and Performance



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Model L
590 ft. lbs. torque

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Model U
200 ft. lbs. torque

Model W
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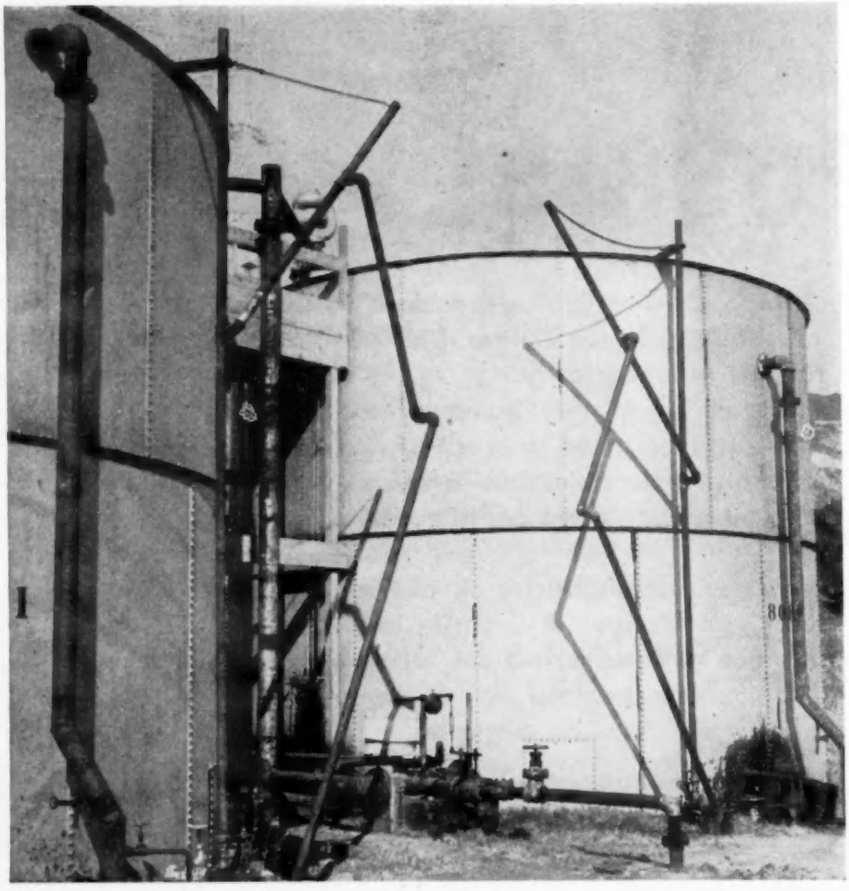
PRACTICAL OPERATING *Hints* FOR THE PRODUCTION MAN

$5.00 will be paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, *Houston*

1. BRINE HANDLING

Adjustable Drain Cuts Labor Demand



Divided flow leg with dual pivot points may be adjusted without windlass or heavy lifting equipment, simplifying water-level regulation with reduced lease personnel.

A GRASSHOPPER-LEG piping arrangement suitable for use on tall wash tanks, and which is sufficiently flexible to permit easy adjustments, may be assembled in the manner illustrated in the photograph. For tanks of this size, a single length of pipe for the lower extension of the leg ordinarily would be so heavy that it would be moved by one man only with some difficulty, but with that limb broken and fitted with two elbows to make a swing the weight of the pipe itself becomes an advantage. When the control line atop the tank is loosened or taken up, the swing arrangement facilitates handling by one man, particularly when only a slight adjustment is required.

Ordinarily a single-pipe leg has to be extended out along a drainage trough when the tank fluid run-off level is changed, but with the existing system, only one small sump box leading to an underground gravity waste line need be used, and in most instances it may be the same box into which the tank low-gauge waste valve empties.

2. BEARING CARE

A ball or roller bearing operates with very little friction—requires lubrication principally to coat the components and prevent corrosion. Since clearances in such a bearing are slight, and excess grease must be forced through these restricted spaces as the unit turns, high pressures are set up which result in high temperatures, excessive expansion, breakdown of the lubricant and at times even erosion of the bearing races by the flow of lubricant. Where a bearing cannot be vented until excess grease ceases to come off under operation, it is usually better to defer greasing until the unit can be taken down and the proper amount applied under visual check rather than to risk clogging the unit with the pressure gun.

3. FIRE PROTECTION

Permanent Tie-In On Dual-Purpose Reel

A CONVENIENT and effective fire-hose reel may be rigged up where the possible location of the fire is within the reach of a single hose, and where the hose stand itself is either fireproof or adequately protected against fire damage from burning adjacent buildings.

The hose is wound on a reel formed with a pipe center or drum of any desired diameter, with an outlet welded at one end just inside the flange onto which the hose coupling may be permanently made up.

By connecting the fire line to the hollow central core of the reel, with a swivel or adequately packed connection between rotating part and stationary fire line, the hose may be strung out with a

Reel carried on water system with hose permanently affixed permits flow with minimum time loss.

ATTACK COLD WEATHER

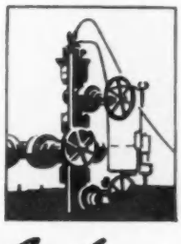
Paraffin Problems

WITH

AT the first signs of paraffin accumulations in tubing, lead and flow lines, get a five gallon can or fifty gallon drum of easy-to-use Parid P-51 solvent —and find how quickly, efficiently and safely it does the job of clearing the lines. Parid has field approval and is widely used —either full strength or dispersed in water. The cost is surprisingly low but the results will keep you sold from now on!

Always available at your supply store.

FOR PUMPING WELLS Parid P-51, full strength or dispersed in water, may be poured into the tubing between polish rod and tubing walls, by raising the stuffing box —without shutting down the well.



FOR FLOWING WELLS the fluid level is dropped by shutting in the well; connecting a pressure lubricator with the tubing and introducing Parid P-51 solvent into the tubing under pressure.

FOR FLOW LINES clear lines of oil and lubricate Parid P-51 into Lead line at well head. Then blow the solvent along the lines with gas from the casing. After two hours or more, flush with oil.

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GOOD well control equipment, proven well completion methods, and seasoned operators to assist you. If you're looking for this combination . . . we have it.

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WAR PRODUCTION!

Oil City's Good Castings are enlisted in the Battle of Production.

OIL CITY BRASS WORKS
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Beaumont, Texas, U.S.A.

minimum of delay, the control valve opened, and the unit put into play promptly.

Having the hose made fast to the reel prevents its being disconnected and dragged elsewhere for temporary—and unauthorized—service, with the result that precious time is lost bringing back and tying in the hose in case of fire.

By winding the hose slowly back onto the reel after use, and exercising care to see that all water is drained as the unit is reeled in, hose life is extended while rot, cracking at sharp corners, and freezing are avoided through this care in replacing.

4. SAFETY

OLD canvas belting, too badly worn to serve longer on the pumping unit, is used by one company as covering for warehouse and office outside stairways. The belting is cut to fit the treads, being brought flush with the outer edge, and the gap, if any, left at the back of the step. The rough fabric, after the outer rubber ply has been worn off or stripped, presents a surface which aids in preventing slipping, even when shoes are mud coated, and which absorbs wear without the rapid abrasion suffered by wooden treads when the mud also contains a percentage of sand or grit.

The surface is free of splinters and does not warp under weather changes.

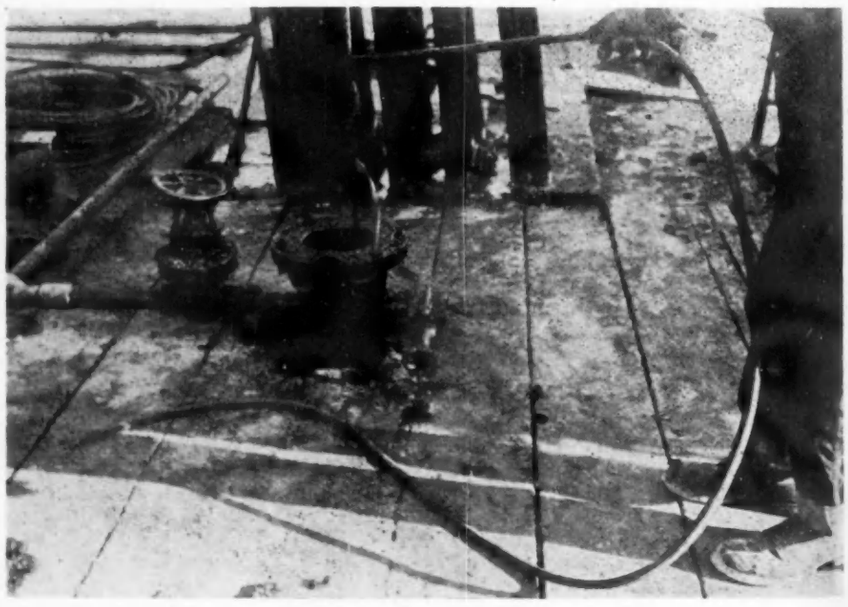
The canvas may be tacked to the treads, held with binding strips, or cemented to the wood. One method involves the use of an asphaltic binder, spread hot on the tread, into which the canvas belting is pressed firmly until the binder cools and solidifies. The "clamp" used for this purpose is simply a second plank, as wide and long as the stair tread, laid over the belting and weighted with sandbags or scrap castings to insure adequate pressure between belt and binder.

5. WELL SERVICING

V-Belt Stripper Speeds Rod Running

BROKEN V-belts removed from gear-reduction pumping units are being put to good use by the production department pulling crews of a company operating a number of shallow wells. The ordinarily discarded belting is used to strip excess oil from rods and tubing when the wells are pulled. One end is laced through several bolt holes in the casing head flange and the other is wrapped two or three times around the rod or tubing string being pulled. One man holds this loose end and controls the amount of friction needed. When the last collar emerges from the hole the hold on the belt is loosened somewhat and no snagging results, permitting the wiping of a maximum area of the string.

Use of belting material has several advantages over the more commonly used length of soft rope or an opened split end of an old casing tread. The belting is more elastic and will allow rod boxes and tubing collars to slip by more readily and still strip off the oil. The material is tough and will last through many more jobs than ordinary rope. It does not tangle easily and has sufficient stiffness to permit it to be grasped and handled easily during a wet pulling job.



One end laced through flange bolt holes, this old belt wipes rods clean and outlasts other improvised and wartime emergency stripper devices such as soft rope or split casing.

☆ ☆ ☆ ☆ WASHINGTON ROUNDUP ☆ ☆ ☆ ☆

THE foreign oil situation held the center of the Washington stage last week, as the State Department, the recently created Senate interstate subcommittee (THE OIL WEEKLY, January 31), and PIWC moved in on Petroleum Reserves Corporation.

At the State Department, Secretary Cordell Hull assured a group of oil men that the foreign policy of the United States with respect to oil would be written there and not in PRC, and promised that the government would give the industry full support in its operations abroad.

That conference, informal as it was, left the oil men with the definite impression that PRC would be given little place in the department's considerations, but while Secretary Ickes, as president of PRC, will have no hand in developing foreign oil policy, as petroleum administrator, he will be consulted freely.

At the capitol, the Johnson subcommittee held a meeting to consider its course with respect to the Brewster-Moore resolution for liquidation of PRC and agreed to hold public hearings immediately with Ickes as the first witness. Its plan to open the hearings February 4, however, was balked by Ickes' inability to prepare himself on such short notice, and they were postponed until February 8.

PRC also was the subject of action at the monthly meeting of PIWC, where a resolution calling for its immediate abandonment was adopted.

The major development in the domestic field was a warning by the council's committee on petroleum economics of an Eastern petroleum shortage this spring worse than that of a year ago.

British Press Says United States Government to Finance Near East Project but Ickes Announces Otherwise

»

PAW Appropriation May Be Cut Along With Other Bureaus

»

Hull and Ickes Said to Have Put Oil Control in F.D.R.'s Lap

»

Oil Materials Manufacture Will Be Given High Preference

»

By B. F. LINZ
Washington Correspondent

☆ ☆ ☆ ☆

Apparently unaware of the impending crisis, however, OPA announced February 6 that the value of fuel oil coupons in District 1 would remain unchanged at 10 gallons per unit for the period beginning February 8.

A direction under P-98-b, extending priority assistance to oil company employees in the building of homes in isolated areas where they may be at work, will be issued shortly. Such assistance has always been extended to operators desiring to erect housing for their workers, but heretofore has not been available to workers desiring to build their own homes.

PIWC Hears Hull Say Foreign Oil Policy to Be Set by State Department

Immediate abandonment of the Petroleum Reserves Corporation was demanded by the Petroleum Industry War Council at its second 1944 meeting February 2-3, at which the major subjects of discussion were PRC and the State Department's foreign oil policy. A resolution calling for abandonment of PRC was adopted by the Council almost simultaneously with the first meeting of the senate subcommittee on the Moore-Brewster resolution to the same end, at which it was decided to open public hearings February 8 with PRC President Ickes as the first witness.

Secretary Hull told the group that the foreign oil policy of the United States will be developed by the State Department and not by PRC, that the policy announced in connection with the recent reorganization of the Department (THE OIL WEEKLY, January 24) would be vigorously applied in support of American operations in their activities abroad, and that in the formulation of any policy PAW—not PRC—would be consulted and the industry would be invited to submit their views.

The Council's action was taken shortly before a group of its leading members met with Secretary Cordell Hull for a discussion of the foreign situation, the government's foreign oil policy as expressed in the recent reorganization of the Department and the relation between the Department and PRC.

Three hours before that meeting, Administrator Ickes talked with President Roosevelt at the White House, but refused to comment on the discussion. There was no comment from the State Department on that conference either, but it was reported that the secretary made it clear that he, and not Mr. Ickes, would be "top man" in matters relating to foreign oil and to have given assurance that the industry would be supported in its efforts in foreign fields.

With all these developments, the position of PRC in the administration blueprint remained unclear, but the general impression was that the oil corporation was on the way out. Secretary Hull is a member of its directorate, but has been rumored to be definitely opposed to any active operation in foreign fields because of possible diplomatic complications which might result. However, he is not believed to oppose the granting of financial assistance by PRC which last week was reported to have negotiated an agreement to advance possibly as much as $15,000,000 to the California Arabian Standard Oil Company for Middle East development, to be repaid in oil.

The State Department comment on the meeting was that it was an informal discussion of the general problems of the oil industry abroad. Those attending were William Boyd, Jr., J. F. Drake, Robert Golley, H. D. Collier, Albert Watts, John Brown, Orville Harden, Harry T. Klein and Deputy Administrator Ralph D. Davis.

The council's resolution calling for abandonment of PRC recited the various charges that "magazine articles and newspaper accounts as to the objectives and actions taken or contemplated by PRC, and the corporate powers and as yet undisclosed activities of said corporation, tend to confuse, obstruct and prevent clear and sound thinking and understanding on this important subject" and that continuation of this confusion will lead to "disunity, distrust and lack of coordination," reviewed the opposition of the industry to government participation in the business and pointed out that PRC is not a duly constituted agency of the government vested with the power and jurisdiction to make and effectuate the foreign oil policy of the United States.

"Steps should be immediately taken to dissolve the Petroleum Reserves Corporation to the end that a considered and sound national oil policy may be formulated," the council declared.

Aside from these phases of the foreign problem, the council meeting held little of importance, the monthly report of the committee on petroleum economics being devoted chiefly to a discussion of the District 1 situation.

Outside of the development of an acceptable basis of compensation for extra tank car costs for grade from West Texas into District 2, there was little change in the situation except in District 1, where further diversion of transportation facilities and other factors "have considerably worsened the outlook for supplies during the next three or four months," Chairman Robert E. Wilson reported.

Stocks of crude and principal products, which on January 1 were considerably above those of a year previous, may be expected to go even lower by March and April than the distress levels which prevailed last spring, it was warned.

Among the unfavorable developments

of the past month, the committee cited the reduction, and threatened further diversion, or the relatively small number of tankers considered to be available for Gulf-East Coast transportation, the reduction in the number of tank cars available and the threat of sharp further diversion to the hauling of special military products, congestion on the railroads and slow turn-around due to the shortage of labor and the hauling of heavy fuel oil in unsealed cars, the rapid deterioration of trucks and the inability to secure adequate repair cars and the failure of the Little-Big-Inch pipe line to come into operation as programmed.

"In addition to the serious effect on the civilian and industrial supply situations on the East Coast which will result if this situation cannot be improved in the near future, the production of war products will shortly begin to suffer as East Coast refineries will be held back from maximum runs by a shortage of crude and Gulf Coast refineries will be prevented from operating at capacity due to a piling up of products beyond available storage facilities, the council was told.

"While it is recognized that the shifting and accelerating of military plans have necessitated some of the foregoing diversions of transportation facilities and threatens to further restrict them, the present outlook for District 1 is so serious that further careful consideration of the over-all picture is urged on the military and other governmental authorities. In addition, it is apparent that during this critical three-months period both the industry and the public must cooperate in the direction of minimizing civilian consumption and utilizing transportation facilities to their maximum efficiency. This includes provision for unloading tank cars seven days a week and 24 hours a day in spite of the recognized manpower difficulties.

"While the number of tankers available is still below present needs, the tanker construction program is substantially on schedule and largely due to work of United States yards. The United Nations tanker fleet has been restored to its 1939 size. Not allowing for possible losses, the 1944 construction program will add more than 20 percent to the tonnage and about 25 percent to the carrying capacity of the tanker fleet available to the United Nations. This, plus the actual operation of the 20-inch line, should result in a distinctly more comfortable situation during the second half of 1944."

Knowlton's Report

The year 1943 was one of unparalleled activity in the oil industry, with production of crude hitting an all-time peak average of 4,100,000 barrels daily, but well completions for the year were approximately 500 less than 1942, it was disclosed by Donald R. Knowlton, director of production, in his monthly report.

Preliminary figures place 1943 completions at 18,947 Knowlton disclosed but late reports may add enough more to bring the total closer to that of 1942.

Geophysical activity reached an all-time peak during the year, he said, and preliminary data indicate that 3438 wildcats were drilled, also an all-time high, many of them "pioneering new petroleum frontiers at depths heretofore unreached."

Budget Bureau Would Trim PAW 30 Percent

A SUGGESTION by the budget bureau that PAW reduce its force by 30 percent is being studied in connection with preparation of the agency's budget for the fiscal year beginning July 1, next.

The suggestion has been transmitted to all of the war agencies, and was prompted by the gradual reduction of the work load that is occurring as plans and controls for wartime business and industrial operations shake down into smooth running machines.

The reduction of nearly a third is not compulsory and there is as yet no indication whether PAW will be able to achieve so great a cut. However, it was said, there has been a slight reduction in the Washington force during the past few months as a result of the decentralization of operations and the elimination of paper work which is being sought through revision of WPB and PAW orders, as exampled by the recent amendments to P-98-b (THE OIL WEEKLY, January 31).

Any cuts made in the force will be confined to the clerical and technical staff and there is no intention of reducing the efficiency of any divisions by elimination of merger. Currently, the Washington staff numbers about 850 persons.

Bottlenecks caused by shortages of certain fabricated products and component parts rather than supplies of basic materials, continue to be the most serious impediment to the production operations, Knowlton reported. However, he said, these problems are receiving intensive study and progress has been made in relieving a number of shortages, among them that of antifriction bearings, through better distribution of available supplies. The supply of internal combustion engines and parts continues very critical, with indications that it will remain so for at least several months. There are some indications that a limited number of airplanes may possibly be secured for producers and drilling contractors.

The manpower problems continue to become increasingly critical, and the manpower and material situations are the basis of a belief in the industry that PAO-11 should not be revoked outright, but that relaxations should be made as the situation warrants.

Knowlton also discussed the treatmen of piercement type salt dome and multiple zone fields, reporting that there is no unanimity of opinion and, "while the majority feel that salt dome fields should be accorded special treatment, there are strong opinions on the part of some that salt dome fields are no different from other fields.

"There is also strong opposition on the part of some operators and engineers to the practice of allowing dual completions," he said. "These are admittedly knotty problems and we are reconciled to the fact that there is no solution which will please everybody and at the same time be in the best interests of the war program. Naturally, the war program will be our first consideration."

The annual canvass of Ray L. Dudley, publisher of THE OIL WEEKLY, of industry drilling programs, Knowlton reported, indicates that the industry is planning an usually active program of drilling for 1944, a program considerably in excess of that determined by the PAW district offices, and, he said, "both the materials and production divisions are closely following the results of THE OIL WEEKLY survey in order that we can best be prepared to meet the material requirements of an enlarged program."

Oil Materials Preference

Material requirements for the oil industry are ranked next to landing barges, aircraft and 100-octane production and assurances have been received that no programs for increased production of civilian type items will be approved by the War Production Board if they require engines, parts, bearings, castings, forgings, tubing or other components required for more essential programs, it was reported by Frank A. Watts, director of materials.

With their war contracts completed, reduced or transferred, oil equipment manufacturers will gradually be enabled to return to the production of items required in production operations, but the demand for many of these items, foreign and domestic, continues to exceed the supply and a considerably increased production will be required to make them available in sufficient quantities for a more active drilling program than the one now under way, he said.

Foreign needs for material are relatively small in comparison with domestic requirements and it is estimated that about 5 percent as many wells will be completed in foreign fields this year as will be drilled in this country, he explained. However, between 10 and 15 percent as many rotary rigs will be operating abroad by the end of this year as will be operating in this country, he said, and foreign needs for material proportionately, will exceed domestic needs. Because the average foreign well requires more material foreign inventories have been depleted to the point of exhaustion during the last three years and it is necessary to carry larger inventories in foreign fields as it is not possible to salvage, rehabilitate and re-use material as extensively as in the United States.

Referring to the confusion with respect to drill pipe and tool joints, Watts reported that during the past three weeks he backlog of tool joint orders has increased from 183,300 to 195,200 but explained that the situation is not as acute as this would indicate, since production of tool joints has increased by 1500 per week during the past six weeks and will further increase to a similar extent during the next six weeks.

About 2,000,000 feet drill pipe will be produced during the current quarter, or slightly more than one half the amount domestic operators indicated in a recent survey would be needed during the first half of the year. After taking into consideration the tool joints which will be placed on used drill pipe, the pipe production indicates that during the quarter

approximately 10,000 more joints of drill pipe will be produced than tool joints.

"Although the present supply of tool joints and drill pipe does not exceed the demand," Watts reported, "there is every indication that sufficient of both are available to fill present needs if these are delivered to fill the most urgent orders first and subsequently supplies to fill these orders which are less urgent. Drill pipe producers and tool joint manufacturers have been requested to cooperate with production operators and PAW in an effort to fill the most urgent orders first and the least urgent orders last. If all involved parties wholeheartedly cooperate during the present transaction period there is every reason to believe that no drilling operation will be delayed for lack of either drill pipe or tool joints."

A discussion of the Elk Hills situation culminated in the adoption of a resolution of support for any plan of operation "acceptable to the parties in interest" which will permit the field to be developed and produced at once to supply oil for the war effort.

A resolution also was adopted urging PAW to issue a directive restricting the production of premium gasoline, it being pointed out that since minimum and maximum octane ratings for house brand and premium fuels were established there has been a sharp increase in premium output which is further depleting the supply of tetraethyl lead.

Eastern Fuel Supply Prospect Still Gloomy

Tank-car shipments into District 1, steadily increasing over a five-week period, averaged 720,158 barrels daily for the week ended January 29, as compared with 683,204 barrels for the preceding week, it was announced by PAW February 3 in its weekly supply report.

However, it was emphasized, there is little prospect of more tank cars being made available for East Coast civilian service, tank trucks are still breaking down and while the little-big-inch pipe line is now being filled it will deliver no products to the East Coast before March, and then only at a low rate initially.

Drum shipments of kerosine are again being resorted to in a big way and are being increased as rapidly as drums are made available.

The supply situation in the East has been aided by mild weather, but Administrator Ickes again warned that they "are tight and will become tighter."

"The real uphill pull begins now," he said. "Heavy and continuing military demands for petroleum products have taken a big bite out of available transportation. Consequently, we are now in a critical period that will develop into a race between available transportation and domestic consumption.

"Even with minimum consumption by civilians, we must draw on stocks. If consumption greatly exceeds what the overland transportation systems can haul into the East Coast, then stocks will fall far short of working levels and shortages will develop up and down the East Coast. Consumption must be kept to absolutely minimum requirements."

British and American Companies Plan Expansion of Near East Oil Operations

Extensive programs for expansion of Middle East oil operations of American and British companies have been under way for some months, it was disclosed February 3 by Administrator Ickes in an announcement that California Arabian Standard Oil Company will immediately undertake the construction of a refinery in Saudi Arabia to make war products for the United Nations.

The refinery will be privately owned and financed by the company, which is owned jointly by Standard Oil Company of California, and The Texas Co., Ickes said.

Other operations revealed by Ickes included expansion programs at Bahrein Petroleum Company's refinery on Bahrein Island; the Abadan, Iran, refinery of the British-owned Anglo-Iranian Oil Company, and the Haifa refinery of Consolidated Refineries, Ltd. Capacity of the Bahrein plant, which is also jointly owned by Standard Oil Company of California and The Texas Company, is being substantially increased.

The lack of any mention of Petroleum Reserves Corporation in the announcement or in an explanatory statement by Ickes indicated that all of the American operations are being conducted privately. The various expansion programs, the administrator said, were developed as part of the general military strategy.

An account of pending construction of refineries and pipe lines in the Eastern Mediterranean area previously released by British sources, reported that the United States government would put up the money (see next page).

"Additional refining facilities in the Persian Gulf area have been under consideration by the petroleum administration for a long time as part of the over-all United Nations military petroleum supply program," Ickes explained. "Several proposals representing our best solutions of the supply and materials problems were presented by PAW to the joint chiefs of staff and the Army-Navy petroleum board. These projects have been selected and approved by the military authorities as those best fitting the many logical factors involved in relation to other parts of the world program.

"PAW's foreign divisions are charged with fitting into the United Nations war program the facilities and properties of American oil companies abroad, as well as advising the military authorities of the over-all problems relating to petroleum resources and facilities of other United Nations.

"For many months the full utilization of Middle Eastern oil resources, both British and American, was impossible because the Mediterranean was a virtually impassable no-man's land, and there were not enough tankers to use the long sea route around Africa. United States reserves, thousands of miles closer to the battle lines, were forced to carry the load.

"Long before movements in the Mediterranean were made easier, however, we were completing plans to lift some of the unequal burden from the United States, and for many months now every refinery in the Middle East has been running full blast for maximum production of war products within the varying limits of available tanker capacity. In addition, PAW from the beginning of the war undertook the study of the advisability of expanding critical materials for refinery expansion to utilize the excess crude oil productive capacity in this and other areas whenever transportation would permit.

"Decisions were not easy because of the urgency of United States domestic programs, particularly our own vital 100-octane plant program. However, in our judgment the Arabian-American and Bahrein projects are of the utmost importance, and the military authorities have concurred. The same considerations have guided our recommendations on proposals affecting British-owned facilities in the Middle East.

"With the help of other interested agencies PAW will support the new Saudi Arabia refinery before the War Production Board to seek the highest obtainable priority.

"The effect of these projects on the supply of petroleum products in the United States cannot be predicted accurately now. Obviously, every gallon of petroleum supplied from outside the United States relieves us here to some extent, but present indications are that these new facilities will serve to meet additional future demands rather than replace current supplies from the United States."

Senate Probe of PRC to Commence February 8

A hint as to the possible angle from which the Johnson oil subcommittee of the Senate Interstate Commerce Committee will approach its investigation of Petroleum Reserves Corporation was given February 4 by Senator Moore of Oklahoma, co-author of the resolution for liquidation of the agency and a member of the subcommittee.

With hearings due to open February 8, Moore charged on the floor of the Senate that PRC was a "back-door approach" of the "socialistic and communistic-minded New Dealers" to take over the oil industry which, he said, they had unsuccessfully attempted in control legislation offered in 1934 and again in 1939.

Moore declared that "there has been considerable stage setting for embarking this country upon the perilous venture of government ownership and operation of the oil business" of which "a conspiracy of the economy planners to freeze and maintain the price of crude oil at low levels" was a part.

"The planned shortage and scarcity

of oil has been backed up by a program of insidious propaganda," he told the Senate. "We have been told over and over that our domestic oil reserves are almost exhausted and that very little more will be found; therefore, it is necessary and expedient that we engage this government in all phases of the oil business throughout the world. The President has suggested that there must be an international pooling of petroleum produced in all parts of the world. Among those who appear to support such international socializing of petroleum, of course, is the president of Petroleum Reserves Corporation. No better way of setting the stage could have been found than the one that was used. Under a frozen price and with rapidly advancing costs, the oil producer has been effectively stymied; many have sold out and quit the business. This is a man-made shortage and the process is still continuing."

Rebutting the argument which has been put forth that the British and Dutch governments were partners with their oil industries in foreign operations, Moore declared that the only interest the British government has in any company is a small stock ownership in the Anglo-Iranian Oil Company in the management of which it takes no hand whatever. The Netherlands government, he said, has no interest in the Royal Dutch Shell or any participating interest in any of that company's foreign operations, nor does it own directly or indirectly any petroleum reserves.

"Undoubtedly," he warned, "if this country pursues the program contemplated by the charter powers of Petroleum Reserves Corporation, it will be the motivating force that will cause other nations to enter into the oil business, resulting in governments competing directly with each other for trade and commerce, with the consequent international complications.

"But more fundamental even than these considerations, and more fraught with danger to the welfare of our country and our people, is the fact that the policy sought to be developed under the Petroleum Reserves Corporation of engaging this country in the field of private trade and commerce will impede and eventually destroy the private enterprise of our own nationals which is the foundation of this, the greatest industrial nation on the face of the earth."

In other Washington quarters there were indications that the foreign oil situation was rapidly becoming a major issue and the possible cause of a new cabinet rift, involving Secretaries Hull and Ickes.

On February 2, Ickes visited the White House at noon to talk with President Roosevelt. Three hours later, oil men met with Hull and were given to understand that questions of foreign policy were handled by the State Department and that PRC had no place in the international picture.

On February 4, Hull and Ickes went to the White House together at noon, and while there was no information as to the subject of their discussion with the President, the two have little in common outside of oil, and observers saw the possibility that the question of PRC's future was laid in Mr. Roosevelt's lap.

Near East Plan Calls for Extensive Developments Financed by U. S.

Plans being suggested for the development of Near East petroleum resources involve the expenditure of more than $100,000,000 of United States government money for several large refineries and extensive pipe line construction, but call for only comparatively small drilling activity as yet, according to British press releases, which last week published details that apparently had been withheld from the American press.

The plan, according to British papers, calls for erection of refining plants at Haifa and Alexandria, Egypt, with a combined capacity of approximately 600,000 barrels daily. Haifa, one of the terminals of the present pipe line from Iraq fields, would have its refining capacity boosted by 350,000 barrels. Because of its strategic location, Alexandria probably will be the site of another refinery to handle 250,000 barrels per day.

The Alexandria refinery would be connected with Saudi Arabia and Kuwait production by a 1500-mile pipe line. It would start at Qatar, near the Persian Gulf in Saudi Arabia, as a 12¾-inch line. Near Damman a 16-inch line from Kuwait would connect, and from this point to Alexandria the line would be 22 inches in diameter, with a capacity of between 200,000 and 250,000 barrels daily.

A second line would involve building of feeders from the Iranian fields to Abadan, where the main refinery of Anglo-Iranian Oil Company is located. The Abadan plant would be connected with Haifa, on the Mediterranean, with a 900-mile 20-inch line. This would save long tanker hauls and traffic through the Suez Canal, in delivering petroleum products to Europe.

A third pipe line, 630 miles long, would start at the Kirkuk fields, in Iraq, and terminate at Haifa, following the route of the existing pipe line.

Because of the high yield of wells and the backlog of producing capacity already said to be built up, no spectacular drilling program to obtain new production is planned. Only 5 wells are planned during the first year in Saudi Arabia and Kuwait, and 10 wells the following year. Supplementing present wells, this number would be expected to take care of oil needs of the Alexandria refinery. In Persia, it is estimated that only 7 new wells will be required each year, while no additional wells would be needed in Iraq until the second and following years—and then only 5 or 10 per year.

Apparently the problem of how to shuffle property interests so that PRC or some agency of the United States can obtain an interest for the contemplated expenditure, has not been worked out. Whether the United States goes ahead with the plans now being considered appears to depend largely upon what agreements can be made with California Arabian Standard Oil Company and Gulf Oil Corporation. The latter has an interest in Anglo-Iranian Oil Company, and the United States State Department is said to be negotiating with the British government for a revision of the agreement.

Standardization Sought In Industrial Definitions

Standardization of well classifications and definitions of terms used in exploratory drilling, designed to secure uniformity in the statistical work of the industry, were discussed January 31 at a meeting of technical advisers from the various districts, district production directors and PAW officials, and are expected to be issued through Dr. F. H. Lahee of Sun Oil Company, Dallas, Texas, next month.

The definitions were practically agreed upon at the conference, but will be held up for a month in order to give the technical advisers further time for final consideration.

They will be reported back to Washington at the end of this month, when the PIWC production committee meets for its pre-council session.

ODT Permits Lifted

Under a new order of the Office of Defense Transportation no ODT permits will be required for the following inland waterway movement:

Crude petroleum and petroleum products down the Mississippi River between Baton Rouge, Louisiana, and Meraus, Louisiana.

Crude petroleum and petroleum products northward on the Mississippi River to the head of navigation.

Crude petroleum and petroleum products on the Illinois waterway system northward as far north as Chicago and southward as far south as Peoria, Illinois.

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Operators of the country's individual fleets of privately-owned trucks have contributed substantially to the conservation of gasoline, parts and truck equipment as well, by slashing nearly 11½ billion truck miles—more than fifty billion tire miles—from their operations in 1943 while transporting equal or greater tonnages of war material and serving the war needs of civilians.

Two million tires—enough to equip 400,000 jeeps for action—is another of the war contributions made in 1943 by private motor trucks.

"This contribution to the war effort," according to A. M. Grean, Jr., president of the National Council of Private Motor Truck Owners, "has been made through the individual patriotic effort of the owners of those vehicles by the application of their 'know how' with respect to their individual fleet operations in the rerouting of vehicles, limitation of frequency of deliveries to retail stores and homes, elimination of luxury special transportation services, joint action among groups of private truck operators in communities and areas, preventive maintenance and various other methods."

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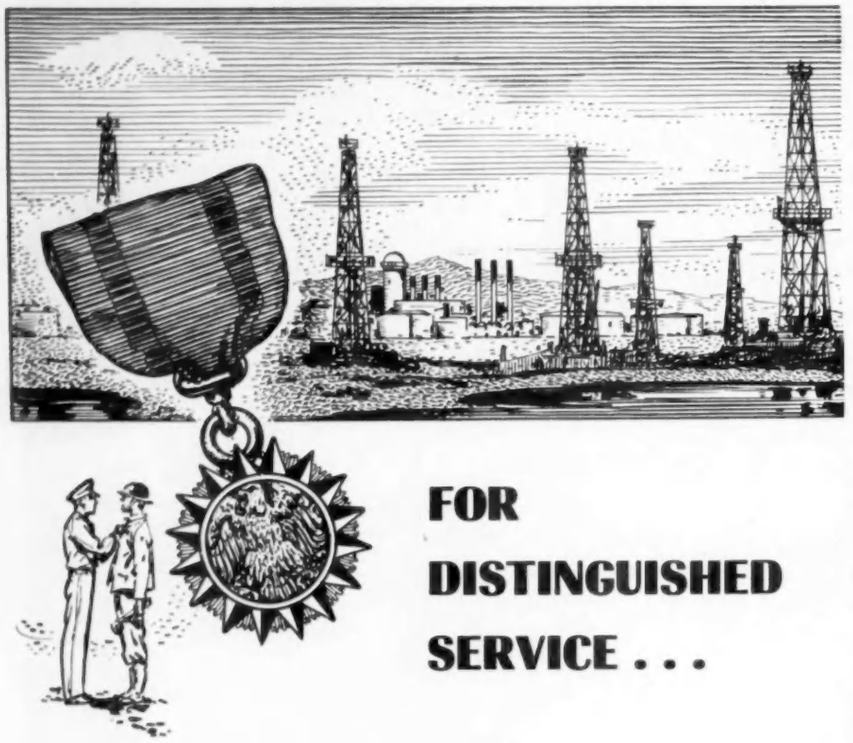

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West Virginia Issues Report on Devonian

"The Devonian System of West Virginia," recently published by the West Virginia Geological Survey, Morgantown, is a 655-page report that is a distinct addition to geological literature of the United States, and should be well received. A similar volume on the Silurian was published in 1941.

This second publication of a series that is planned to cover all the rock systems of the state contains detailed descriptions of each Devonian formation occurring in the area. Surface exposures of special geologic or economic interest also are treated.

A section is devoted to discussion of the oil-and-gas-bearing Oriskany Sandstone, and its exploration to date. Numerous oil and gas sands in the late Chemung Hampshire formations are likewise described. Further possibilities, especially for deeper production, are suggested.

Accompanying the report are four structure-cross sections, based on selected well logs.

A report on the Cambrian and Ordovician rocks of the state is in preparation.

New Method for Control Of Salt Water Disposal

Oil operators, after a conference with Centralia and Illinois state officials, have started a new experiment in the Centralia area to test a method for controlling salt water disposal.

Two pits are to be dug and lined with an impervious clay, which in turn will be coated with a commercial product, to prevent seepage, which has caused considerable damage to property in the area. Results of the experiment with the pits, which are to be located in Centralia, should be known within 30 days, operators said.

Oil and Gas Law Course Registration Still Open

Registration for the ninth annual series of lectures on oil and gas law at the South Texas School of Law, Houston, is still open.

Mimeographed copies of the lectures previously given will be furnished new registrants. Bound copies of the lectures will be available soon after the course ends April 27.

Lectures are given by prominent lawyers and geologists in language appropriate for laymen. Classes are held each Thursday evening at the YMCA.

Metering Permitted

Continental Oil Company has received permits from the Texas Railroad Commission to meter some of its oil produced in the Hildreth and Mueller Fields in Montague County. This plan will be substituted for gauging the individual lease tanks. It is the first order of the kind that the commission has issued.

Repressure Pettus

Union Producing Company has been authorized by the Texas Railroad Commission to repressure with gas the 3540-3600 foot horizon in the old Pettus field, Bee County.

Needed Boost in Gasoline Production Achieved at Expense of Fuel Output

The problem of adequate supply of crude oil production, which threatens to be a serious one throughout this year, was evidenced in the industry's operations during the week ended January 29, weekly reports of the American Petroleum Institute showed.

Production of crude oil was close to the all-time peak of last November, and daily average crude runs to stills were within 100,000 barrels of the all-time high reached several weeks ago; but with production of gasoline highest since the January just after Pearl Harbor, the refinery output of fuel oils was lower than in other recent weeks, and substantial withdrawals were made from stocks of both distillate fuel and residual fuel.

United States crude oil production averaged 4,409,000 barrels per day in the week of January 29, up 20,000 from the previous week and highest level this year and within 27,000 barrels of the all-time peak. The production exceeded that in the corresponding week last year by 583,000 barrels daily or 15.2 percent.

Having averaged 4,359,000 barrels per day, runs to stills in the week ended January 29 were off 9,000 barrels from the previous week but not so far below the all-time record of 4,453,000 barrels daily reported in the week ended January 1 this year. The runs were 661,000 barrels a day or 18 percent higher than those of 3,698,000 barrels in the week ended January 30 a year ago.

Production of gasoline was increased to 13,427,000 barrels in the week ended January 29 from 12,943,000 the week before, an expansion of about 70,000 barrels in daily average output. And the new rate of production exceeded that in the like week a year previously by 30 percent. With the output enlarged, there was about a normal seasonal build-up in gasoline stocks, amounting to 1,322,000 barrels for the week. But inventories of 81,085,000 barrels of finished and unfinished gasoline on hand January 29 were 7,000,000 barrels or 8 percent smaller than those held a year ago on the corresponding date, while it is indicated that demand for this product will be materially greater this year than in 1943.

Production of gasoil and distillate fuel declined to 4,054,000 barrels in the

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED	
	February 5	January 29
Arkansas	78,300	78,400
California	823,200	815,650
Long Beach	30,200	30,500
Midway-Sunset	55,400	55,900
Kettleman Hills	43,000	41,450
Wilmington	101,200	100,400
Rest of State	593,400	587,700
Colorado	6,300	7,500
Illinois	218,100	218,400
Salem	25,800	26,100
Louden	35,700	35,600
Other New Pools	144,400	144,600
Old Pools	12,200	12,100
Indiana	14,000	12,650
Kansas	266,900	286,700
Kentucky	22,500	22,450
Louisiana	360,050	358,500
North	76,850	77,500
South	283,200	281,000
Michigan	52,900	51,600
Mississippi	45,800	44,400
Missouri	95	90
Montana	25,850	25,698
Nebraska	1,200	1,400
New Mexico	113,250	113,000
New York	14,500	13,650
Ohio	9,300	9,000
Oklahoma	328,500	328,800
Oklahoma City	48,200	48,700
Seminole Area	71,250	71,600
Rest of State	209,050	208,500
Pennsylvania	41,200	40,200
Tennessee	30	30
Texas	1,909,950	1,899,625
Upper Gulf Coast	516,550	520,700
East Texas Field	390,550	366,050
Rest of Eastern Texas	110,300	116,350
Lower Gulf Coast	193,300	194,200
Southwest Texas	75,300	79,600
South Central Texas	20,000	19,900
West Texas	362,050	364,500
North Texas	140,000	140,325
Panhandle	101,900	98,000
Utah	12	12
West Virginia	8,600	8,450
Wyoming	95,050	90,600
Total United States	4,435,587	4,426,805

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gasoil and Distillate Stocks		Residual Fuel Oil Stocks	
	Barrels Daily	Week Ended	Barrels Daily	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended
Highs:												
1939	3,910	8- 5	3,650	10-21	278,607	5-26	87,769	4-22	39,562	10-28	116,237	8-26
1940	3,890	3-16	3,690	6-22	265,865	8-31	102,817	4-20	49,051	10-19	109,135	9-14
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	49,861	11-14	95,857	1- 3
1943	[1]4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	46,187	11-27	72,881	1- 2
1944	[1]4,409	1-29	[1]4,453	1- 1	240,992	1- 1	81,085	1-29	42,310	1- 1	57,330	1- 1
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	[2]20,722	4-15	105,397	4- 8
1940	3,335	11-30	3,370	1- 6	237,339	1-27	79,847	11- 9	23,551	4- 6	102,344	2-10
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,381	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,264	1- 8	238,148	1-15	76,302	1- 1	37,266	1-29	52,857	1-29

TRENDS OF 1942 AND 1943

Trends in Week Ended:	Crude Oil			Gasoline		Gasoil and Distillate		Residual Fuel	
	Production Daily	Runs to Stills Daily	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End
1942:									
January 3	4,038	3,961	244,440	13,797	92,987	3,855	49,357	6,918	95,857
January 31	3,871	3,848	250,740	13,292	97,810	3,817	40,674	6,640	91,189
February 28	4,016	3,675	259,373	12,131	105,635	3,799	34,547	6,813	88,285
March 28	3,820	3,667	263,208	11,663	105,624	3,661	31,756	6,344	83,045
April 25	3,581	3,506	257,073	10,535	102,897	3,267	29,240	6,869	81,107
May 30	3,877	3,522	255,023	10,478	95,355	3,034	31,384	6,993	79,628
June 27	3,719	3,581	253,364	10,713	88,396	3,549	32,851	6,615	77,304
July 25	3,691	3,658	249,262	10,864	82,281	3,647	35,966	6,796	77,816
August 29	3,964	3,697	249,007	11,300	80,831	3,850	42,060	6,875	78,034
September 26	3,909	3,802	242,785	10,954	80,550	4,215	45,954	7,094	78,943
October 31	3,901	3,731	239,266	11,153	79,159	.....	48,131	.....	79,166
November 28	3,878	3,736	234,850	11,269	78,854	.....	49,739	.....	77,796
1943:									
January 2	3,871	3,734	233,938	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	4,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 28	4,196	4,227	236,170	12,420	72,525	4,351	37,928	8,732	67,250
September 25	3,344	4,156	233,013	12,206	70,024	4,608	40,328	8,560	66,659
October 30	4,383	4,176	237,219	12,813	69,297	4,642	44,591	7,968	63,838
November 27	4,414	4,261	239,761	12,638	69,980	4,379	46,187	8,633	62,143
December 25	4,363	4,185	241,310	12,597	74,024	4,457	43,791	8,689	57,596
1944:									
January 1	4,357	[1]4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 8	4,365	4,221	238,114	12,630	77,654	4,434	41,509	9,061	55,731
January 15	4,373	4,203	238,148	12,682	78,557	4,231	39,920	8,459	54,327
January 22	4,389	4,368	238,814	12,943	79,763	4,334	38,296	9,041	53,431
January 29, 1944	**4,409**	**4,359**	.....	**13,427**	**81,085**	**4 054**	**37,266**	**8,889**	**52,857**
January 30, 1943	3,826	3,698	[4]233,733	10,339	8?,169	3,696	37,057	7,426	70,763
Change:									
In week	+20	—9	+666	+484	+1,322	—280	—1,030	—152	—574
In year	+583	+661	+5,081	+3,088	—7,084	+358	+209	+1,463	—17,906
In year	+15.2%	+17.9%	+2.2%	+29.9%	—8.0%	+9.7%	+0.6%	+19.7%	—25.3%

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, January 23, 1943.

ROPE
CONSERVATION
NOTE BOOK—

PROPER ROPE STORAGE
PAGE 1
Always store rope in dry, well ventilated places where mildew cannot develop. When stored in box places such as in direct sunlight or on rafters beneath a metal roof, rope tends to lose its protective oils which causes the fibres to become brittle and crisp. This causes rapid deterioration and loss of strength. When rope is stored for several months it should be piled in loose coils on a grated platform where it will get ample ventilation. For storage over short periods rope should be coiled loosely and hung on pegs.
For further information on treatment of rope, write for Booklet "Care and Preservation of Rope."

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7 days ended January 29 from 4,334,000 the week before, a decrease of 40,000 barrels in the daily average output; and in the meantime there was a reduction of 1,030,000 barrels (147,000 daily) in stocks of that product. The production, despite the reduction from the previous week, was 51,000 barrels a day or nearly 10 percent greater than that in the like week a year ago. Following the week's draft on stocks, inventories were about the same as a year previously, having totaled 37,266,000 barrels.

The production of residual fuel oil totaled 8,889,000 barrels in the week ended January 29, having been about 22,000 barrels a day lower than in the previous week, although the industry meanwhile took on the average 82,000 barrels a day from storage, with demand proceeding at record rate. Residual production was, despite the cutback, 20 percent greater than in the corresponding week a year ago. The stocks of 52,857,000 barrels left in storage January 29 were approximately 18,000,000 barrels or 25 percent below those held a year previously.

Markets Reflect Scarcities Of Materials, Transportation

Markets continue extremely tight in reflection of scarcities of both materials and transportation. In most districts there have been continued drains on stocks of residual fuel oil as well as seasonal withdrawals of gasoil and distillate fuel, while difficulty is being encountered in building up inventories of gasoline.

On the East Coast there has been continued heavy drain on supplies of light fuel oils for heating, with stocks of kerosine reduced particularly low. However, there has been some improvement in gasoline inventories in that region.

On the Gulf Coast there have been heavy drafts on stocks of gasoline as well as other products, and some refineries are virtually sold out, while encountering demand that promptly absorbs current production. However, the transportation situation also has become increasingly tight with tankers and barges apparently more active in meeting military needs. Thus transportation now is imposing limitations on shipments more in line with available supplies, and in the immediate future, there may not be any extreme difficulty for refiners in supplying all the products for which transportation is available.

Transportation also is a continuing problem in the Middle West, with rail shipments being held up by lack of tank cars. However, difficulty in obtaining crude oil remains a basic problem.

There is continued difficulty in the Mid-Continent in meeting demand for heating oil and kerosine, with refiners allocating production among customers, while steady demand for gasoline does not permit some plants to accumulate any of that product.

In the Western Pennsylvania there is continued scarcity of kerosine and all classes of fuel oils, while lubricants also are promptly absorbed, with government purchases heavy and other demand strong.

Carter Oil Company Buys Wyoming Production

The Carter Oil Company has purchased holdings of P. N. Fortin and L. B. Hancock in the Elk Basin field, Wyoming. The properties consist of approximately 900 barrels daily production and three refineries. Gathering and marketing branches also include facilities at Billings, Montana, and Lovell and Worland, Wyoming.

Huitt Heads Chapter of API in Drumright

The Drumright, Oklahoma, Chapter of the American Petroleum Institute has recently been reorganized after several years of inactivity, and officers for 1944 have been elected as follows: J. A. Huitt, Deep Rock Oil Corporation, chairman; Thad Hill, Fluid Packed Pump Company, vice-chairman; E. W. Brake, Gulf Oil Corporation, secretary-treasurer; and W. L. McCormick, chairman advisory committee.

Other members of the advisory committee are: O. S. Anderson, Big Four Petroleum Company; R. W. Boyd, Tidewater Associated Oil Company; Stanley Donnelly, The Texas Company; H. S. German, Cities Service Gas Company; George Heape, Pure Oil Company; Bill Moody, Deep Rock Refinery; H. R. Rockhold, Gulf Oil Corporation; J. W. Stoker, Sinclair-Prairie Oil Company; G. C. Stout, Comail Oil Company; E. E. Thompson, L. B. Jackson Company, and Roy Wilson, Magnolia Petroleum Company.

Recently elected officers of Drumright Chapter of API include, left to right: Thad Hill W. L. McCormick, J. A. Huitt and E. W. Brake.

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Gravity-Scale Crude Oil Prices in Mid-Continent Fields

Posted in most instances between May 19 and May 21, 1941

GRAVITY	Oklahoma-Kansas	North Louisiana-Arkansas Mississippi					Inland Texas and New Mexico				South Texas		Texas Gulf Coast			Louisiana Gulf Coast						
		[1]Rodessa etc.	[2]Champagnolle etc. Tinsley Miss.	Bunkie, Eola, Olla, S. Olla, Little Crk. (by Standard)	Lisbon, La. (by Gulf)	[3]Atlanta, Buckner, etc. Ark.	North and West Central Texas	[4]Eastern Texas	Panhandle	West Texas, New Mexico	[5]Refugio Type	[6]Mirando Type	[7]Gulf Coast	[8]Anahuac Type	[9]Dickinson Type	[10]Gulf Coast	[11]Standard of La.	[12]Texas Co.	[13]Texas Co.	[14]Magnolia Pet. Co.	[15]Shell Oil Co.	Jennings (by Gulf)	[16]Rocky Mt. Area (Salt Creek, etc.
17–17.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.94	....	....	....
18–18.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....
19–19.9	....	....	....	....	....	....	....	$0.80	$0.80	$0.70	$1.08	$1.03	$1.06	$0.98	$0.93	$1.06	....	....	....	.98	$0.99	....	....
20–20.9	$0.85	....	....	....	....	$0.68	$0.85	.82	.82	.72	1.10	1.05	1.08	1.00	.95	1.08	$0.90	....	....	1.00	1.01	....	....
21–21.9	.87	....	....	....	....	.70	.87	.84	.84	.74	1.12	1.07	1.10	1.02	.97	1.10	.92	....	....	1.02	1.03	....	....
22–22.9	.89	....	....	....	....	.72	.89	.86	.86	.76	1.14	1.09	1.12	1.04	.99	1.12	.94	....	....	1.05	1.05	....	....
23–23.9	.91	....	....	....	....	.74	.91	.88	.88	.78	1.16	1.11	1.14	1.06	1.01	1.14	.96	....	....	1.08	1.07	....	....
24–24.9	.93	$0.88	$0.86	$1.03	....	.76	.93	.90	.90	.80	1.18	1.13	1.16	1.08	1.03	1.16	.98	....	....	1.11	1.09	....	....
25–25.9	.95	.90	.88	1.05	....	.78	.95	.92 .97	.92	.82	1.20	1.15	1.18	1.10	1.05	1.18	1.00	....	....	1.14	1.11	....	....
26–26.9	.97	.92	.90	1.07	....	.80	.97	.99	.94	.84	1.22	1.17	1.20	1.12	1.07	1.20	1.02	....	....	1.17	1.13	....	....
27–27.9	.99	.94	.92	1.09	$0.81	.82	.99	1.01	.96	.86	1.24	1.19	1.22	1.14	1.09	1.22	1.04	....	....	1.19	1.15	....	....
28–28.9	1.01	.96	.94	1.11	.83	.84	1.01	1.03	.98	.88	1.26	1.21	1.24	1.16	1.11	1.24	1.06	$1.06	....	1.21	1.17	....	$0.96
29–29.9	1.03	.98	.96	1.13	.85	.86	1.03	1.05	1.00	.90	1.28	1.23	1.26	1.18	1.13	1.26	1.08	1.08	....	1.23	1.19	....	.98
30–30.9	1.05	1.00	.98	1.15	.87	.88	1.05	1.07	1.02	.92	1.30	1.25	1.28	1.20	1.15	1.28	1.10	1.10	$1.05	1.25	1.21	....	1.00
31–31.9	1.07	1.02	1.00	1.17	.89	.90	1.07	1.09	1.04	.94	1.32	1.27	1.30	1.22	1.17	1.30	1.12	1.12	1.07	1.27	1.23	$1.07	1.02
32–32.9	1.09	1.04	1.02	1.19	.91	.92	1.09	1.11	1.06	.96	1.34	1.29	1.32	1.24	1.19	1.32	1.14	1.14	1.09	1.29	1.25	1.09	1.04
33–33.9	1.11	1.06	1.04	1.21	.93	.94	1.11	1.13	1.08	.98	1.36	1.31	1.34	1.26	1.21	1.34	1.16	1.16	1.11	1.31	1.27	1.11	1.06
34–34.9	1.13	1.08	1.06	1.23	.95	.96	1.13	1.15	1.10	1.00	1.38	1.33	1.36	1.28	1.23	1.36	1.18	1.18	1.13	1.33	1.29	1.13	1.08
35–35.9	1.15	1.10	1.08	1.25	.97	.98	1.15	1.17	1.12	1.02	1.40	1.35	1.38	1.30	1.25	1.38	1.20	1.20	1.15	....	....	1.15	1.10
36–36.9	1.17	1.12	1.10	1.27	....	1.00	1.17	1.19	1.14	1.04	1.42	1.37	1.40	1.32	1.27	1.40	1.22	1.22	1.17	....	....	1.17	1.12
37–37.9	1.19	1.14	1.12	1.29	....	1.02	1.19	1.21	1.16	1.06	1.44	1.39	1.42	1.34	1.29	1.42	1.24	....	1.19	....	....	1.19	1.14
38–38.9	1.21	1.16	1.14	1.31	....	1.04	1.21	1.23	1.18	1.08	1.46	1.41	1.44	1.36	1.31	1.44	1.26	....	1.21	....	....	1.21	1.16
39–39.9	1.23	1.18	1.16	1.33	....	1.06	1.23	1.25	1.20	1.10	1.48	1.43	1.46	1.38	1.33	1.46	1.28	....	1.23	....	....	1.23	1.18
40 and Up	1.25	1.20	1.18	1.35	....	1.08	1.25	1.27	1.22	1.12	1.50	1.45	1.48	1.40	1.35	1.48	1.30	....	1.25	....	....	1.25	1.20

[1] Gulf schedule for Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, El Dorado and Rodessa, Texas. Standard of La. schedule for Cotton Valley, Rodessa, Shreveport (Cross Lake), and Caddo. Magnolia schedule for Haynesville, Cotton Valley, Rodessa, and Miller Co., Ark. Texas Co. schedule for "North Louisiana."

[2] Schedule of Standard of La. for Catahoula Lake, Elm Ridge, Hemphill, De Soto, Sabine, Fouke, Homer, Miller Co., Sugar Creek. Schedule of Root Petroleum Co. for Nick Springs, Urbana light, Schuler sweet, Rainbow, South Field (El Dorado), and Champagnolle.

[3] Schedule of Standard of La. for Atlanta, Buckner, Magnolia, Patton, Schuler: Jones sand, Village. Schedule of Root Petroleum Co. for Schuler: Reynolds lime, and Schuler: Jones sand.

[4] Humble schedule for Anderson, Cherokee, Limestone, and Navarro counties and Navarro Crossing field, except that prices from 80 to 92 cents represent postings only for Hawkins field, Wood County. For Talco crude, Magnolia's prices are same as Humble's for Hawkins. Rodessa, Texas, prices are same as in Rodessa, La.-Ark.

[5] Schedule for Refugio, E. White Point, Greta, Melon Creek, Midway, Minnie Bock, O'Connor-McFaddin, Plymouth, Saxet, Taft, and Tom O'Connor.

[6] Schedule for Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (N. and S.), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, and Tesoro.

[7] Humble schedule for Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa, Mykawa new, Raccoon Bend, South Thompsons, Sugarland, Thompsons, Webster. Texas Co. schedule for Ariola, Ganado, Hamman, Hillje, Humble, Kubela, Magnet, Manvel, Markham, Mauritz, Old Ocean, Pickett Ridge, Port Neches, Sour Lake, West Columbia, Withers; except that schedule provides $1.36 top, 34 gravity. Pan American Prod. Co. schedule for Hastings and South Houston. Gulf schedule for Spindle Top, Sour Lake, Lovells Lake, West Beaumont, Goose Creek, South Liberty, Big Creek, Blue Ridge, Fannett, Moore, Barbers Hill, Hankamer, Thompsons, Lochridge, Dyersdale, and Hull (old) crudes. Sun schedule for Barbers Hill, Batson old, Cotton Lake, Esperson below 35 gravity, Goose Creek, Greens Lake, Hull below 25, Humble below 35, Nome, North Dayton below 25, Orange, Saratoga, Sour Lake, South Liberty.

[8] Humble schedule for Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull old and new, Pierce Junction, Red Fish Reef, Turtle Bay fields. Sun schedule for Anahuac, Caplen, and Turtle Bay. Gulf schedule for Anahuac. Hull new, Pierce Junction, Orange and Thompsons deep.

[9] Humble schedule for Dickinson, Gillock, Hardin, League City, and Rowan fields. Pan American Prod. Co. schedule for Gillock crude.

[10] Sun Oil Co. schedule for Bayou Blue, Chacahoula, Fausse Pointe, Hackberry (E. and W.), and Vinton. Texas Co. schedule for Bay St. Elaine, Caillou Island, Iberia, Lake Barre, Lake Pelto, Leesville and Port Barre for crude ranging in gravity up to 27-27.9; for lighter oils in those fields see Footnote 12. Gulf schedule for Edgerly, Starks, Vinton, E. Hackberry, Cameron Meadows, Leesville. Deduct 10 cents for Gulf's prices for Timbalier Bay, Grand Bay, Quarantine Bay, and West Bay. Deduct 2 cents for Standard of La. prices for University (Baton Rouge) crude of 30 to 35.9 gravity.

[11] Standard of La. schedule for Bayou Mallet, Bayou Sale, Choctaw, Darrow, Jeanerette, Lirette, N. Crowley, S. Crowley, Fort Barre, Potash, Roanoke, St. Martinville. Deduct 10 cents for Anse La Butte.

[12] Texas Co. schedule for Bateman Lake, Dog Lake, Fausse Point, Horseshoe Bayou, Jefferson Island, Plumb Bob, Vermilion Bay, West Cote Blanche, and Delta Duck Club. Add 8 cents to these prices for Texas Co. postings for 28 or higher gravity at Bay St. Elaine, Caillou Island, Iberia, Lake Pelto, Leesville, Port Barre, and Lake Barre.

[13] Texas Co. schedule for Delta Farms, Golden Meadows, Lake Salvador. Also Standard of La. for Golden Meadows.

[14] Magnolia schedule for Lockport, Cameron Meadows, West Gueydan.

[15] Shell Oil Co. schedule at Iowa, Black Bayou, White Castle. For Shell's prices at Roanoke and Chalkley fields deduct 5 cents. For Shell's prices at Gibson South Houma, and West Lake Verret fields deduct 10 cents.

[16] Sinclair-Wyoming Oil Co. prices at Salt Creek, Lost Soldier, Iron Creek, effective May 20, 1941. Deduct 10 cents for East Mahoney and deduct 20 cents for Mahoney and Wertz.

MID-CONTINENT FLAT PRICES

FIELD—	Flat Price	Date Posted
Arkansas:		
Big Crk., Columbia, McKamie, Macedonia, Dorcheat, sour dist.	$1.25	2- 3-43
Dorcheat, Macedonia dist'l.	1.30	11-16-42
Smackover, Heavy	.83	5-22-41
Texarkana sweet distillate	1.40	-42
Louisiana, North:		
Cotton Valley Distillate	1.40	9- 1-41
Cotton Valley (Holloway sn.)	1.25	5-22-41
Lisbon Distillate	1.20	5-22-41
Urania	1.15	5-22-42
Louisiana, South:		
Erath	1.21	5-21-41
Garden Island	1.36	5-21-41
Happytown	1.15	5-20-41
Lafitte, Paradis	1.19	5-21-41
Lake Arthur & Tepetate	1.18	5-21-41
Lake Mongoulois	1.36	5-21-41
Ville Platte	1.30	5-22-43
Nebraska:		
Falls City, in field	.90	8- 1-41
Falls City, in tank cars	.95	8- 1-41
Shubert, in tank cars	.97	8- 1-41
Texas:		
Alice, Benavides (No. Sweden), Ben Bolt, Clark-Muil, Sun and Tom Graham	1.35	5-21-41
Cayuga	.90	5-21-41
Chapel Hill 50° and up	1.25	3-19-42
Chapel Hill below 50°	1.18	1-20-42
Clay Creek	1.00	5-22-41
Cleveland	1.26	5-21-41
Conroe	1.43	5-21-41
Esperson 35° & up; S. Esperson (Sun Oil)	1.30	5-22-41
East Texas, Flag Lake	1.25	5-20-41
Flour Bluff, East Flour Bluff, and La Rosa	1.33	5-21-41
Hockley-Cochran Counties	.87	5-21-41
Livingston, Cleveland	1.25	5-20-41
Long Lake	1.23	5-21-41
Luling	1.05	5-21-41
Lytton Springs	1.17	5-21-41
North Rincon	1.45	2- 3-43
Salt Flat, North Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.14	5-21-41
Satsuma, Tomball	1.40	5-21-41
Sun Oil Co. at Batson (new), Fig Ridge, Hardin, Hull 25 and up, Humble 35 and up, LaBelle, N. Dayton 25 and up, Oyster Bayou, Seabreeze, S. China, W. Orange and Willow Slough	1.25	5-22-41
South Cotton Lake	1.35	5-22-41
Sun, N. Sun, N. Rincon, Garcia	1.35	5-22-41
Van	1.08	5-21-41
Yates (Deep)	.95	5-20-41
Yates (Shallow)	.82	5-20-41
Yturria (Sun in S. Texas)	....	....

MICHIGAN PRICES

Central (Basin):		
Porter, Greendale, Crystal, Wise, Midland, Vernon, Saginaw	$1.44	5-27-41
Buckeye, Edenville, Bentley, Beaverton, Monitor, Kawkawlin	1.42	5-27-41
Freeman, Lincoln, Sherman Redding, Temple, Winterfield, Trenton-Monroe Co., Fork Tws.-Mecosta Co.	1.39	5-27-41
Hamilton-Grout	1.29	5-27-41
Adams	1.27	6- 1-41
Arenac, Clayton, Ogemaw, W. Branch	1.24	5-27-41
Southwest (Shallow):		
Traverse, crude in Allegan, Kent, Ottawa, Van Buren Counties	1.45	6- 2-41
Clare	1.11	5-27-41

MIDDLE WEST PRICES

FIELD—	Flat Price	Date Posted
Lima, Ohio-Ind.	$1.50†	10-28-42
Illinois Basin (Sohio Corp.)	1.37	5-19-41
Lake Centralia-Salem, Illinois	1.37	5-19-41
Eastern Ill.-Western Ind.	1.22	5-21-41
Plymouth, Illinois	1.05	4-28-43
Western Kentucky	1.37	8- 9-43
Birk City, Western Kentucky	1.37	8- 9-43
Kentucky River, Eastern Ky.	1.43	6-19-41
Big Sandy River, Eastern Ky.	1.43	8- 9-43
Cleveland, Lodi, Chatham, Ohio	1.30	9- 1-41

ROCKY MOUNTAIN STATES PRICES

Colorado:		
Canon City and Florence	$1.05	5-21-41
Iles	1.07	5-20-41
Montana:		
Cat Creek	1.15	4- 1-41
Cut Bank (6 Buyers)*	1.05-1.20	3-30-42
Dry Creek	1.02	5-20-41
Sunburst	1.00	5-20-41
New Mexico:		
Artesia	.94	5-21-41
Hogback	1.00	10-11-38
Wyoming:		
Big Muddy	1.08	5-30-41
Byron	.70	3- 4-43
Elk Basin	1.00	5-21-41
Elk Basin, Black	.90	4-28-43
Frannie, Light	.85	2-26-43
Frannie, Heavy	.62	2-26-43
Garland	.60	3- 4-43
Grass Creek, Light	1.00	5- 1-41
Grass Creek, Heavy	.65	4- 1-43
Hamilton Dome	.60	2-26-43
Lance Creek (Ohio Oil Co.)	1.12	7- 1-41
Mill Creek	.72	10-11-38
Oregon Basin	.65	3- 4-43
Osage	1.30	10-11-38
Poison Spider	.65	2-26-43
Rock River	1.15	5-21-41
Salt Creek, Tensleep Heavy	0.8285	2-27-43

*About 25% of Cut Bank crude brings $1.20 per barrel; 65% less than $1.20 and minimum $1.10; and 10% less than $1.10.

†$1.50-price applies to about ¾ of field's production; $1.60 to ¼ of it.

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE	Current Range (Cents a gal.)		Changes from Month Ago	
Oklahoma Refineries:				
60 Oct. & Under.	5¼	5¼	...	...
63-66 Octane	5⅝	5⅝	...	...
72 Octane	6	6	...	...
76 Octane, Ethyl.	6¾	6¾	...	...
Mid-Western Tank Car:				
60 Oct. & Under..	5¼	5¼	...	...
63-66 Octane	5⅝	5⅝	...	...
72 Octane	6	6	...	...
76 Octane, Ethyl.	6¾	7¼	...	...
New York Harbor:				
68-70 Octane	9¼	9¼	...	...
72 Octane	9¼	9⅝	...	...
Gulf Coast. Cargoes:				
60 Oct. unleaded.	5	5	...	...
65 Oct. unleaded.	5¼	5¼	...	...
68 Oct. unleaded.	5½	5½	...	...
70 Oct. unleaded.	5⅝	5⅝	...	...
63-65 Oct. leaded.	...	...	...	...
72 Oct. leaded....	5¾	5¾	...	...
Min. 76 Oct. l'ded	6¾	6¾	+½	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3..	4¾	4¾	...	...
F.O.B. Brk'g, Tex	3⅝	3⅝	...	...
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4½	4½	...	...
Mid-Western Tank Car:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4½	4½	...	...
New York Harbor	7⅛	7⅛	...	...
†Gulf Coast:				
41-43 water white	4⅛	4¼	...	...
42-44 water white	4⅛	4⅛	...	...
RANGE OIL				
At Okla. Refs.... 4		4⅛	...	...
In Mid-Western Mkt.				
Group 3, basis... 4		4	...	—⅛
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 prime white	3⅞	3⅞	...	...
No. 1 straw	...	...	...	...
No. 2 straw	3⅝	3⅝	...	...
No. 3	3½	3½	...	...
Mid-Western Tank Car:				
No. 1 prime white	3⅞	3⅞	...	...
No. 2 straw	3⅝	3⅝	...	...
No. 3	3½	3½	...	...
New York Harbor:				
No. 1	7⅛	7⅛	...	...
No. 2	6¾	6¾	...	...
No. 3	6¾	6¾	...	...
Gulf Coast Cargoes:				
No. 2	3¾	3¾	...	...
DIESEL & GAS OILS (Cents per gallon, cargoes, according to Diesel Index number)				
Gulf Coast:				
43-47 diesel index ...		...	...	...
48-52 diesel index 4		4	...	...
53-57 diesel index	4⅛	4⅛	...	...
58 and above....	4¼	4¼	...	...

HEAVY FUELS	Current Range (Per Bbl.)		Changes from Month Ago	
Oklahoma Refineries:				
No. 6	...	...	...	...
14-16 Gravity $0.97		$0.97	...	...
Mid-Western Tank Car:				
No. 5 ..... .85		.85	...	...
No. 6 ..... .80		.80	...	...
New York Harbor:				
No. 5 ..... 1.95		2.01	...	...
No. 6 ..... 1.65		2.07	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast $0.85		$1.27	...	...
New York Harbor... 1.65		2.07	...	...
DIESEL OIL, HEAVY (Per barrel, ships' bunkers)				
Gulf Coast, below 28 grav.....$1.35		$1.35	...	...
Gulf Coast 28 grav... 1.65		1.65	...	...
New York Harbor... 2.78		2.78	...	...
LUBRICATING OIL (Cents a gallon)				
Oklahoma Refineries:				
Bright stock (viscosity at 210°):				
200 vis. D, 10-25 pour point 27		27	...	...
150-160 vis. D:				
0-10 pour point....23		23	...	...
10-25 pour point....22½		23	...	...
25-40 pour point....23		23	...	...
150-160 vis. E.....22		22	...	...
120 vis. D, 0-10 pour point 22		22	...	...
Cylinder Stocks:				
600 s.r. dark green... 8½		8½	...	...
600 s.r. olive green...10		11	...	...
631 s.r.		...	...	...
Neutral Oils (viscosity at 100°, 0-10 pour point):				
Pale Oils:				
60- 85 vis. No. 2 color 8		8	...	...
86-110 vis. No. 2 color 8½		8½	...	...
150 vis. No. 3 color..14½		14½	...	...
180 vis. No. 3 color..15		15	...	...
200 vis. No. 3 color..15		15	...	...
250 vis. No. 3 color..16		16½	...	...
280 vis. No. 3 color..17		17	...	...
300 vis. No. 3 color..18		18	...	...
Red Oils:				
180 vis. No. 5 color..15		15	...	...
200 vis. No. 5 color..15		15	...	...
280 vis. No. 5 color....		...	...	...
300 vis. No. 5 color..17½		17½	...	...

LUBRICATING OIL (Cents a gal.)			Changes from Month Ago	
Western Pennsylvania:				
Cylinder Stocks:				
600 s.r. filtrable.....15		15	...	...
650 s.r. 15½		15½	...	...
600 flash 16		16	...	...
630 flash 17		17	...	...
Bright Stock (No. 8 Color, 145-155 vis. at 210°, 540-550 fl.):				
10 pour test.....30½		30½	...	...
15 pour test.....29½		29½	...	...
25 pour test.....25		25	...	...
Viscous Neutrals (No. 3 Color, vis. at 70°):				
200 vis. (180 at 100), 420-425 fl.:				
Zero pour test.....35		35	...	...
10 pour test.....34		34	...	...
15 pour test.....33		33	...	...
25 pour test.....28		32½	...	+½
150 vis. (143 at 100), 400-405 fl.:				
Zero pour test.....33		33	...	...
10 pour test.....32		32	...	...
15 pour test.....31		31	...	...
25 pour test.....26		30½	...	+½

EASTERN STATES CRUDE OIL PRICES

FIELD—	Flat Price	Date Posted
Bradford-Allegany	$3.00	3-26-42
Sw. Pa. Pipe Line	2.65	3-26-42
Eureka Pipe Line, W. Va.	2.59	3-26-42
Corning Grade, Ohio	1.31	5-27-41
Buckeye Crude, Ohio	2.30	6-18-41

MAJOR CRUDE OIL PRICE CHANGES

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....
Nov. 12, 1940	Up 15	.....	.....
Dec. 17, 1940	Up 15	.....	.....
Jan. 27, 1941	Up 15	.....	.....
April 1, 1941	.....	Up 5	.....
April 23, 1941	Up 10	.....	.....
May 19, 1941	.....	Up 10	.....
May 21, 1941	Up 15	.....	.....
June 18, 1941	Up 20	.....	.....
Aug. 14, 1941	Up 23	.....	.....
Aug. 25, 1941	Cut 23	.....	.....
March 26, 1942	Up 25	.....	.....
April 1, 1943	.....	.....	Up ‡25

‡ 14 and 15 gravity.

CRUDE OIL PRICES IN CALIFORNIA

Prices per barrel in field, posted by Standard Oil Company of California, effective May 25, 1943. All gravities above those quoted take highest price offered in that field.

GRAVITY	Signal Hill (Long Beach)	Wilmington	El Segundo	Seal Beach	Huntington Beach	Inglewood	Olinda, Brea Canon	Athens-Rosecrans	Torrance	Richfield	Whittier, East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, Kern River Kern Front, McKittrick Round Mountain	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Elwood Terrace
12-12.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.94	....	....	....	$0.94	$0.94	$0.94	....	....	....
13-13.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....	.96	.96	.96	....	....	....
14-14.9	....	$0.93	....	....	$0.96	....	$0.95	....	$0.95	$0.95	$0.95	$0.97	....	....	.98	....	....	....	.98	.98	.98	....	....	....
15-15.9	....	.96	....	....	1.00	$1.01	.97	....	.97	.96	.97	.97	....	....	*Playa	....	....	....	.98	.98	.98	....	....	....
16-16.9	....	.96	$1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	del	....	....	....	.98	.98	.98	....	....	....
17-17.9	....	.96	1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	Rey	....	....	....	.98	.98	.98	....	....	....
18-18.9	$0.93	.96	1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	.88	....	....	....	.98	.98	.98	....	....	....
19-19.9	.93	.96	1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	.88	....	....	$0.98	.98	.98	.98	....	....	....
20-20.9	.93	.96	1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	.88	....	....	.98	.98	.98	.98	....	....	....
21-21.9	.93	.96	1.01	....	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	.88	....	....	.98	.98	.98	.98	....	....	....
22-22.9	.96	.98	1.02	$0.88	1.00	1.01	.97	....	.97	.96	.97	.97	....	....	.88	....	....	.98	.98	.98	.98	$0.95	....	....
23-23.9	1.00	1.02	1.05	.92	1.02	1.01	.98	....	.97	.98	1.00	.97	....	....	.91	....	....	.98	.99	.98	.98	.95	....	....
24-24.9	1.03	1.06	1.07	.97	1.05	1.04	1.01	....	1.01	1.02	1.03	.97	$0.99	....	.95	....	....	.98	1.03	.99	.98	.95	....	....
25-25.9	1.07	1.09	1.10	1.01	1.08	1.07	1.04	....	1.05	1.06	1.07	.98	1.02	....	.99	....	....	.98	1.07	1.01	.98	....	....	....
26-26.9	1.11	1.12	1.12	1.06	1.11	1.10	1.08	....	1.09	1.10	1.11	1.01	1.06	....	1.03	....	....	.98	1.11	1.04	.98	....	....	....
27-27.9	1.15	1.15	1.15	1.10	1.14	1.14	1.11	....	1.13	....	1.15	1.05	1.10	$1.04	....	....	....	1.01	1.15	1.07	.98	....	....	....
28-28.9	1.18	1.18	1.17	1.15	1.17	1.17	1.14	....	1.17	....	....	1.08	1.13	1.08	....	....	....	1.04	1.19	1.10	1.00	....	....	....
29-29.9	1.20	1.21	....	1.19	1.20	1.20	....	$1.17	....	....	....	1.12	1.17	1.12	....	....	....	1.07	1.24	1.13	1.02	....	....	....
30-30.9	1.23	1.24	....	....	1.23	1.22	....	1.21	....	....	....	1.15	1.21	1.15	....	$1.01	$1.09	1.10	1.28	1.16	1.04	....	....	FOB
31-31.9	....	....	....	....	....	1.24	....	1.25	....	....	....	1.19	1.24	1.19	....	1.04	1.12	1.14	....	....	1.06	....	....	Ship
32-32.9	....	....	....	....	....	....	....	1.29	....	....	....	1.23	1.28	1.23	....	1.07	1.14	1.17	....	....	1.09	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	....	....	1.27	....	1.26	....	1.10	1.17	....	....	....	1.11	....	....	$1.22
34-34.9	....	....	....	....	....	....	....	1.36	....	....	....	1.31	....	1.30	....	1.13	1.20	....	....	....	1.13	....	....	1.25
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.35	....	....	....	1.16	1.22	....	....	....	....	....	$1.23	1.28
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.39	....	....	....	1.19	1.25	....	....	....	....	....	1.26	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.43	....	....	....	1.22	....	....	....	....	....	....	1.29	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.47	....	....	....	1.25	....	....	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	....	....	....	....	....	1.51	....	....	....	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	....	....	....	....	....	....	....	....	1.53	....	....	....	....	....	....	....	....	....	....	....	....

* Effective April 1, 1943, posted by Union Oil Company of California.

U. S. Exclusive Right to Wildcat in Northwest Makes It One-Company Show

Summarizing the documented history of recent petroleum developments in northwestern Canada, the dominion's wartime information board has revealed that the United States government was granted exclusive exploratory rights in the Mackenzie district and Yukon Territory, including the right to nominate a company of its own choice to carry out the exploratory and development program. This explains the virtual "monopoly" enjoyed by the Imperial Oil Company, as the "nominee" of the United States Army and State Department. It is this so-called monopoly that was scorchingly criticized by the Truman committee in its report on the Canol situation.

According to Ottawa, permission was not granted to other companies to participate in the program, because of the desire to avoid putting any unnecessary obstacles in the way of development of the oil resources of the region for vital and immediate needs. The statement also pointed out the inadequacy of transportation as another reason for limiting activity to the endeavors of a single company, familiar with the area and the ways and means best suited to economical operations there.

The United States - Canadian agreement covers not only the contingencies of the Canol development, but applies to the whole general region of Northwestern Canada, where other potential oil fields may be sought. According to Canadian authorities the agreement was consummated for the sole purpose of "discovering oil fields capable of producing the required 20,000 barrels per day."

Expansion of wildcatting activities in the area is implied in the most recent statement by the secretary of the United States legation at Ottawa, Lewis Clark: "The developmens of our joint war effort have, in the opinion of my government, made it vitally necessary to discover additional sources of petroleum in Northwest Canada and Alaska, to supplement the supply which will be obtained from Norman Wells."

The most reliable information available indicates exploration by drilling has not yet been carried on at any great distance from the Fort Norman area, and it is believed that only 2 wildcat wells were put down in that vicinity during last summer's drilling season.

The Canadian government has explained that exclusive exploratory rights were placed with the United States government to prevent the possibility of intervention by any one whose interest was not identical with that of the Canadian or the United States governments, and that might retard the search for and development of the oil resources in the area covered by the regulations or interfere with the production of petroleum there for the use of the Allies in the conduct of the war. In other words, it is a one-company show for the duration, unless other companies find a way to break through the fence by means of congressional action, assuming that other companies are interested in the possibilities of the area.

New British Company to Produce, Transport Oil

A new company Petroleum Exploration, Ltd., has been formed in Great Britain, for the stated objects of producing, refining, storing, transporting and marketing of petroleum and its products, and to act as owners and operators of tanker vessels. The new company has been capitalized at £500,000, with shares £1 par value. Details as to location of the company's proposed operations have not been disclosed.

Creole Company Output Expected to Be Increased

Creole Petroleum Company plans to increase production to 450,000 barrels daily, according to an announcement made by the United States Bureau of Foreign and Domestic Commerce. All crude oil produced by this company is run to refineries in Venezuela.

Alberta Offers Leases Free to Aid Development

Hundreds of thousands of acres of wildcat territory under crown ownership in Alberta, Canada, have been offered on a lease-free and rental-free basis by special action of the Alberta government. Any responsible company, syndicate or individual operator may secure exploration and drilling rights under this arrangement, covering blocks up to 10,000 acres in size. The action is calculated to further stimulate development in the province.

Each applicant is required to make a cash deposit of one dollar per acre as a guarantee that at least that amount will be spent on geological, geophysical or "other exploratory work," and on well drilling ventures. The dollar deposit is returned to the applicant upon completion of the required amount of exploration endeavor and expenditure.

Reopening of Taber Is Demanded by Canadians

Oil men in Canada are venting considerable criticism of the lack of official action in providing outlets for the potential production of the Taber oil field, 35 miles east of Lethbridge, Alberta, which has been shut down since early in December.

The field has 5 producing wells, rated at a total daily yield of 24,000 barrels. One of the wells has been making 500 barrels daily on production test, with the oil being run to field storage tanks. The oil from Taber wells is 19 gravity, and is low in gasoline content, which makes it unacceptable to refineries in the area. Producers and royalty owners are demanding that a market be found for the oil, and that further development of the field be encouraged.

Lion Oil Company to Drill in Nova Scotia

E. H. Barton, president of the Lion Oil Refining Company, Eldorado, Arkansas, has announced that the company will begin drilling a number of wildcat tests in Nova Scotia as soon as weather permits. The company holds exploration licenses on more than 800 square miles of territory there, and is taking up drilling options as a result of favorable reports by geological and geophysical parties that have been working the area in detail for more than a year. Locations for exploratory holes will be announced shortly.

Barnsdall's First Foreign Operations in Venezuela

Barnsdall Oil Company, according to an announcement by its president, James A. Dunn, of New York, plans to begin operations in Venezuela in the near future. Plans are well advanced for acquiring concessions there. Three officials of the company in Venezuela for several weeks negotiating with government officials, are expected to return to this country in February to make recommendations as to this first foreign venture by the company.

Wartime Oils Limited Completes Three Wells

First well completions announced by the government of Canada, under its new system of oil development financing through Wartime Oils Limited, are Okalta 12, 14 and 15, all in Turner Valley. No. 12 is reported as having an initial production of 277 barrels daily. No. 14 has been completed as a producer, with no initial test report. Okalta 15 was flowing 26 barrels of oil per hour before acidizing.

Floods Handicap Work of Developing Chinese Field

Heavy rains, producing widespread floods, created havoc through much of the arid region of northwestern Kansu Province in China during September and October. As a result, considerable damage was done to oil field equipment and installations there, representing many months of work done under conditions of the greatest difficulty. The region is remote from railroad transportation, and all supplies and machinery must be carried in by truck from Lanchow, more than 300 miles southeast. The difficulty of obtaining trucks and tires has held back the reconstruction program, although some progress has been made. It is reported that the Chinese have even built a small refinery in the province, and that the gasoline produced is satisfactory for use as truck fuel.

U. S. Field Operations

Illinois Basin

Wayne County Records Two New Producers

Robinson & Puckett's pool opener, Felix 1, SE NE SE 12-3s-7e, 1½ miles north of production in Mills Shoals pool in Wayne County, Illinois, is testing Aux Vases sand. After plug was drilled and the hole cleaned out to 3,252 feet, the well tested 6 barrels of oil per hour. Deepened to 3,261 feet, it tested 8 barrels per hour. The operators are starting a new well in the area.

Wayne County: Felix Jablonski has completed Orndorff 1, NW NW 3-1n-9e, the discovery well of the Mt. Erie pool, as an Aux Vases producer. On initial pump test the well made 47 barrels of oil in 24 hours after a 30-quart shot in pay at 3,107-15 feet. Total depth is 3,119 feet.

Jefferson County: The Texas Company has set casing for test of three oil shows in a wildcat, Greene 1, C S½ SE SE, 15-1s-3e. Pipe was set to 2,851 feet with total depth at 2,862 feet. Shows of oil were found in Aux Vases sand and Rosiclare and McClosky lime. The prospective pay zones will be tested through perforations.

Coles County: C. A. Beckman has a new wildcat test, underway in the much tested Mattoon area just south of the city of Mattoon. Herman Community 1, NE SW SW 25-12n-7e, is drilling below surface casing. It is located approximately a mile from Aux Vases sand production.

Douglas County: Ohio Oil Company has leased 160 acres of the Douglas County Farm under terms which call for drilling within a year. According to the Douglas County Board of Supervisors, which leased the land to the company, the first well is to be drilled to at least 4,000 feet and a bonus is to be paid on the lease if drilling does not begin within six months. Eighteen sections of land are scheduled to be blocked for the venture.

Cumberland County: F. D. Walker and associates' Shields 1, SE SE 21-10n-8e, southeast of the village of Trilla, has set surface pipe after a long delay and is ready to start making hole. The test is a wildcat in an area favorably regarded on seismograph work.

White County: A new pool is in prospect at Gulf Refining Company's Parsons 1, SW SW SW 7-4s-14w, near Crossville. Approximately 20 feet of saturation was cored in Paint Creek sand at 2,776 feet. Shows also were encountered in Biehl and Clore sands at shallow depths.

Jefferson County: Bell Brothers have run casing at Parker 1, E½ NW NE 24-1s-3e, after recovering approximately 700 feet of oil on a drill-stem test of McClosky lime at 2,773-78 feet. This is a west offset to a discovery drilled by Bell Brothers several months ago.

Indiana

One of two wildcat wells on a 6,000-acre block of land assembled in 1941 in Tippecanoe County, Indiana, is slated for abandonment after attracting considerable attention several weeks ago. It is Milo Ritchie's Dubes 1, SE SW 22-24n-3w. Scheduled for a test of Trenton lime, the well encountered sulphur water and no oil and was shutdown.

The other well on the same block, Arthur Wolfe's Wolfe 1, NE NW SE 10-24n-3w, drilling with cable tools, was shutdown at 800 feet with water in the hole. The test, like Dubes 1, is slated for a test of Trenton lime expected near 1,100 feet.

Kentucky Well Prorated

Miller & Schiarella have completed their extension to the Utley pool in Union County, Kentucky, and have decided to impose self proration on the well's production. Moore 1, 16-P-21, ½-mile northwest of the Utley pool, was completed flowing 360 barrels of oil and no water in 24 hours through ¾-inch choke on 2-inch tubing after 4,000 gallons of acid.

The operators plan to produce the well at the rate of 120 barrels per day.

Michigan

Montcalm County Wildcat Will Be Put on Pump

After averaging 91 barrels per day flowing by heads from a Dundee lime pay at 3474-75 feet, White and Stewarts' Jorgensen 1, C NE NE 14-12n-6w, Montcalm County, abruptly shut off and on a bailer test showed 1600 feet of water in 19 hours. Plans to acidize were cancelled and the wildcat now will be equipped to pump. An analysis of the water established it as coming from the pay formation. Previously suspected as a small closure the showing of water will place a further damper on additional development. Socony Vacuum Oil Company has five offsets.

Arenac County: Basin and Rayburns' Weblo 1, 8-19n-4e, first Michigan discovery in 1944, was deepened from 2843 to 2846 feet and while samples showed an extension of the pay section no appreciable gain in the previous production, 165 to 240 barrels daily. It will be acidized.

Mississippi

New Oil Field Opened In Wayne County Area

A new field is in the offing in Wayne County where Humble Oil & Refining Company is making completion tests on City Bank Farmers Trust 1, Section 1-9n-9w, in Eucutta area.

Casing was perforated at 5138-55 feet, and tubing is being run. On one drill-stem test the well flowed at rate of 22 barrels of oil hourly for 13 hours and estimated 1,500,000 cubic feet of gas per day. The oil is 19 gravity. The hole is bottomed at 6807 feet with 7-inch casing set to 5313 feet.

The discovery is the second in the area this year. Last week The California Company opened a new and prolific pay in the Cranfield area, which has indications of developing into a major reserve.

Kansas

New Arbuckle Lime Field Test in Barton County

What appears to be a new Arbuckle lime field is being tested at Minerals Products Company's Reis 1, NW NW SW 30-16-12, Barton County. The well based Kansas City-Lansing lime at 3394 feet and topped Arbuckle lime at 3397 feet. Carried on down to 3403 feet in the lime, the well began showing. Drilling was discontinued and 5-inch casing was run to 3400 feet, where it is waiting for cement to set prior to testing. This location is in an area that has been developed in adjacent fields in Arbuckle lime. Top of Topeka lime was checked at 2703 feet and Lansing at 3157 feet. Indications are that the well can complete for a new pool.

Pratt County: Another good well has been added to the Chitwood area, opened last year by Lion Oil Refining Company. Skelly Oil Company's Dowell 1, ne se ne 22-28-12w, on the west side of production and immediately west of the 160-acre discovery lease, completed for the maximum state potential of 3,000 barrels daily from Simpson sand, with bottom at 4415 feet.

Stafford County: Hershfield et al's Heyen 2, C NE NW NW 24-22-12, tested potential of 916 barrels daily from Arbuckle lime at 3,645 feet. The pool is due for immediate development. The well assigned the potential is near a previous test that failed to show for commercial production.

National Associated Petroleum Company's Fischer 1, C SE NE 2-22-13w, in the Drach field area, is in Arbuckle lime with a good showing. The well had the formation at 3723 feet and drilled 5 feet of saturation. It is testing.

Oklahoma

New Pool in Prospect and Another Pay Zone Found

East of Lovell field of northwest Logan County, where Second Wilcox sand is productive, Atlantic Refining Company's Kerfoot 1, SEc NE 31-18-3w is drilling below 6,290 feet after first showing for production in Wilcox sand. A drill-stem test between 6264 and 6279 feet showed sufficiently to be classed as a prospective pool opener despite the fact that a later test at 6271 to 6282 feet showed only hard and dry sand. Electric log was to be run. Prospects are that the operator will continue on down and will either back up for further tests or will run casing and perforate. Even if the well fails to show for a high completion test, the possibility is that the location is on the edge of a new field.

Seminole County: In the area east of Wewoka, Jordan Petroleum Company et al's Chamblee 1, NW NW SE 15-8n-8e, has proven the existence of Misener sand production as a new pay for the region. The sand was topped

at 3976 feet and drilled to 3983 feet, from which zone it produced at a rate of 10 barrels of high-grade oil per hour. Wilcox sand tested dry but some shows were encountered in Hunton lime.

McClain County: Carter Oil Company's two tests of deep-seated seismic structures to the west of Namaha Ridge are still making hole. Cottingham 1, C SE SW 4-7n-3w, reamed down to 10,821 feet and drilled ahead. Hole was in hard tight dry sand. This is an Ordovician sand beneath the usual Wilcox section which showed some oil. No test of this showing was made prior to carrying the hole on down to present depth. The company's Johnson Ranch 1, C SW NE 13-8n-4w, on a similar feature, drilled into Viola lime to pick up a slight show at 10,013-10,015 feet in low porosity stratum. The well drilled on through this streak and into white crystalline lime that carried no shows. Hole is being deepened past 10,040 feet.

Pottawatomie County: Stanolind Oil & Gas Company's Bell 1, SEc SW 21-11-2e, which at first looked promising in Wilcox sand, cored from 6008 to 6013 feet and obtained only dry dolomitic sand and hard dolomite that tasted salty. Total depth is 6025 feet with indications discouraging.

Garvin County: Sohio Producing Company's Evans 1, SW NW 5-2n-1w, a well that is gaining considerable attention by all operators in Southern Oklahoma, ran into a fishing job at 4992 feet. The well is still in Pennsylvanian sediments and is located upon a seismic high.

West Texas

Pecos Ellenburger Strike Attracts Three Offsets

A trio of tests have been assigned to the area near a new Ellenburger strike indicated for Pecos County by Standard Oil Company of Texas' Mac-Der Company 1, C NE NW T & St L 36, Block 144, and other short-term leases will require early tests. The prospect was awaiting perforation of pipe set at 4727 feet, or 3 feet off bottom, after showing for heavy flow of high-pressure gas with oil spray from Ellenburger, topped at 4706 feet with elevation of 2643 feet. It is 6½ miles south of the Oswego Ellenburger discovery. Humble Oil & Refining Company's Smith 1 is starting as a north offset, and the company is starting Wilson 1, ½-mile west. Standard Oil Company of Texas' Mac-Der Company 1, lease 5, C NE SW T & St L 4, Block 228, is 1¼ miles northeast of the prospect.

Crane County: Gulf Oil Corporation's Waddell et al 45, SWc PSL 27, Block B-26, opened a new Permian horizon in the northeast portion of the Sand Hills field when the well cleaned itself at 3230 feet while atempting to cement off crevice that caused loss of returns at 3144-90 feet. The well was flowing at estimated rate of 10,000 barrels of 28.7-gravity pipe line oil and 25,000,000 feet of gas when shutin on same day as the blowout. This production is from the McKnight lime, which produces small wells in the nearby McKnight pool, and has previously accounted for nominal oil and gas shows in the Sand Hills field. Cement has been squeezed into formation at 3016-3130 feet to indicate that Waddell et al 45 will deepen to regular 4200-foot lime.

Hockley County: Stanolind Oil & Gas Company's Cobb 1, SEc Labor 103-E, League 75, Haskell CSL survey, will set pipe to make more decisive test of broken saturation and porosity at 4639-69 feet after proving dry on drill-stem test. It is about 1000 feet below the top of the San Andres.

Mabee Field: The Texas Company's Mabee 1, which opened this southeastern Andrews County pool last September, pumped 312 barrels of 33-gravity oil on official gauge from San Andres lime at 4640-4704 feet, having plugged back from sulphur water at 4770 feet. No acid was used. Followup tests drilled before the end of 1943 virtually proved 3000 acres for production without a failure. The company's Mabee 2, 5800-foot southwest extension, pumped 271 barrels of fluid, including 15 percent bs&w, after using 10,000 gallons of acid at 4704-62 feet. Mabee 3, situated 1½ miles northeast of the discovery, used 12,000 gallons of acid at 4720 feet, and was pumping 10 barrels hourly, including rotary and acid residue. Three other tests have reached the casing point. The Texas-New Mexico Pipe Line Company's 16.2-mile extension into the field will be ready for service this week.

Fullerton Field: Magnolia Petroleum Company's Logsdon 1, ½-mile south of a recent east extension, confirmed its high structural position in flowing oil with rotary returns in drilling to 7055 feet, where production test is underway.

Cambrian Sand: Phillips Petroleum Company's Callan 1, northeastern Schleicher County wildcat, was awaiting orders after yielding salt water and rotary mud when tester was used at 5903-6065 feet in Cambrian, topped above the 5800-foot level. Top of barren Ellenburger was entered near 4600 feet. Although the Cambrian has accounted for a single oil well in the Wentz pool, it has been reached by comparatively few tests in the district.

Deep Prospects: Phillips Petroleum Company's Price 1, Pecos County, halted at 13,027 feet in cherty-lime to install a heavier rotary, indicating that the company proposes to try and reach its Ellenburger objective, although it is the deepest in the district by a wide margin. In Hale County, Amerada Petroleum Corporation's Kurfees 1 tested water after perforating at four levels between 8740-9922 feet after plugging back from granite at 10,250 feet, and will be abandoned. Shamrock Oil & Gas Corporation's Ellwood-Gulf 1, Mitchell County, yielded a small amount of gas-cut mud with brackish-sulphur water from Ellenburger at 7960-84 feet, and was coring below 8005 feet. Continental Oil Company's Jones 1-A, Northwestern Gaines County, was drilling lime at 11,310 feet and apparently out of the Devonian chert section, while Humble Oil & Refining Company's Cox 1, west part of county was drilling lime at 10,835 feet.

Winkler County: Sinclair Prairie Oil Company's Walton 4-A, ¾-mile northwest of the discovery well of the Keystone-Ellenburger area, entered Ellenburger at 9163 feet, 68 feet high, and drill-stem test at 9178 feet failed because of a leak in drill pipe. The discovery logged a 307-foot section of gas-distillate before entering oil pay. In the Kermit-Ellenburger area, Magnolia Petroleum Company's Walton-State 21 was delayed in perforating pipe set on bottom at 10,680 feet with an oil producer assured from Ellenburger that was entered at 10,581 feet, or 136 feet low. The company's Walton 234, ¾-mile northwest outpost, logged Silurian at 8900-9316 feet, and was drilling chert-lime at 9446 feet. Sinclair Prairie Oil Company will explore the Ellenburger between these Winkler County deep areas in starting Walton 1-D, C SW SW PSL 19, Block 77, with an 11,000-foot contract.

West Central Texas

Semi-Wildcat in Stephens Rates Gas and Oil Spray

Phillips Petroleum Company's Wild 1, western Stephens County semi-wildcat southeast of the Ibex field, rated at 2,000,000 feet of gas with spray of 45-gravity oil when tester was used at 4014-28 feet. This production is from a thin section of Marble Falls sand topped at 4016 feet. The prospect was drilling shale at 4165 feet to explore the Ellenburger before running pipe to try for completion. The company's Burford 1, situated in the Shackelford County sector of the Ibex field, abandoned in Ellenburger at 4356-4504 feet.

Jones County: Eason Oil Company and Jones & Stasney's Freeman 1-A, wildcat for the Truby area, passed up 1000 feet of oil in hole from Gunsight pay at 2495-97 feet in drilling to 2797 feet, and pipe has been landed to try for completion through perforations.

North Texas

Cooke County Campaign May Cross Into Oklahoma

An aggressive drilling program is likely for the prolific high-gravity oil discovery made on the Cosefield prospect, Cooke County, with possibility of Oklahoma lease owners participating. This new pool was opened when Sinclair Prairie Oil Company's Montgomery 1, Robert Finley Survey, recorded natural potential of 1212 barrels of 40.8 gravity oil, gas-oil ratio 776/1, based upon official 3-hour test through 1½-inch choke on tubing. Production is from Snuggs sand section of the Strawn at 5112-37 feet, which yields a lower gravity oil with nominal sulphur content in the Walnut Bend field, situated 1¾ miles southeast and separated by Ellenburger failures. Sinclair Refining Company built a 2-mile line to the discovery. Sinclair Prairie Oil Company has started Cory 1, Alexander Horton Survey, as a 900-foot northwest offset to its discovery. More rigs will be moved in as additional acreage is proved. The Texas Company is to drill a west offset. Considerable lease activity has occurred on the Oklahoma side of the structure.

Northern Ordnance, Inc's Davis 1, prospective oil strike in Eastern Cooke County, 1¼ miles northeast of Woodbine, was showing considerable oil with rotary mud and water while unloading for production test of Strawn sand when bottomed at 4357 feet, with 5½-inch cemented at 4348 feet. The presence of a structure and production possibilities was given this area by two offset failures ⅞-mile southeast.

Montague County: S. D. Johnson and Alco Valve Company's Howard 1, Guadalupe College Survey 5½ miles south-

east of Belcherville, was running pipe with hole bottomed at 6947 feet after logging several promising oil and gas shows in Simpson series, topped at 6543 feet. This wildcat also showed production possibilities in Bend, topped at 5878 feet with elevation of 935 feet. In the Hildreth field, Sinclair Prairie Oil Company's Middleton 4 expanded production north with potential of 2345 barrels natural through 2½-inch with production from perforations at 6050-6101 feet without including the third pay zone logged in drilling to 6327 feet. The nearby Mueller pool recorded its fourth Bend producer and a northwest extension through completion of Continental Oil Company's Kaiser 1, flowing 860 barrels natural through ½-inch from perforations at 6082-6100 feet.

Wildcats: Rogers Lacy and L. S. Flannery's Lyles 1, Block 21, San Augustine Survey, Clay County, was awaiting acid treatment after showing gas with small volume of free oil in swabbing through perforations at 6172-84 feet in Mississippi, topped at 6163 feet and 77 feet low to a nearby Ellenburger failure. In Haskell County, Hunter & Hunter et al's Hughes 1, M. Travieso survey, abandoned at 3340 feet in Palo Pinto entered at 3278 feet and high for the area.

East Texas

Bowie Wildcat Brightens Smackover Lime Prospect

The search for production from the Smackover lime in East Texas assumed a brighter outlook when Barnsdall Oil Company's Heilborn 1, Bowie County wildcat, two miles southwest of Elam, yielded a small amount of low-gravity black oil with drilling fluid on preliminary test through perforations at 7708-16 feet in Smackover, topped at 7690 feet. Electric survey recorded possible production in Porous zone at 7706-22 feet with water from this depth to bottom of hole at 7836 feet. The Smackover is being counted upon as a potential source of production in East Texas, although more than a dozen tests have been drilled at scattered points.

Hunt County: Humble Oil & Refining Company's Norman 1 is the fourth Smackover failure for the county, having quit in Schist at 7157 feet after recovering salt water in Smackover at 6875-6915 feet. In Franklin County, the company's Hague 1 was drilling at 9855 feet in Cotton Valley, topped at 8730 feet while its Wright 1, Morris County, was abandoned at 11,814 feet with water in Smackover.

Hopkins County: R. B. Campbell and A. G. Hill's Warren 1, situated on a 10,000-acre block centering 3½ miles southeast of Cumby, was abandoned at 5991 feet after recovering nominal oil saturation along with water in Paluxy, topped at 5850 feet. The partnership plans additional tests on its acreage, and a Smackover project may be included.

Franklin County: Tide Water Associated Oil Company and Seaboard Oil Company's Campbell 1, northeast offset to their New Hope field dual-pay discovery, tested a small amount of oil, gas and water in trying for a deeper pay in the Travis Peak with 6-inch pipe at 8450 feet and bottomed at 8707 feet. This outpost passed up regular oil pays at 7200 feet and 7900 feet. The well will be plugged back to test through perforation at 8400-10 feet.

Smith County: Interest in the Sand Flat prospect has shifted to the southeast outpost involving Arkansas Fuel Oil Company's Marsh 1, which was showing broken oil saturation while coring at 7070 feet, probably in Paluxy. Top of Goodland was called at 6925 feet, being lower than the key well for the activity. Skelly Oil Company's Chisum 1, which failed to make a producer from several porous zones in Pettit and Travis Peak, prepared to resume testing through perforations at 9265-9307 feet in basal Rodessa. The company is atempting to make a dual completion, with the Paluxy considered the best bet for production. Sun Oil Company's Patterson 1, west outpost, failed to make a producer in Paluxy, and was drilling at 7480 feet to explore the lower zones. A fault was cut near the 7400-foot level, possibly cuting out a portion of the Paluxy section, thus improving its structural position.

Wood County: Shell Oil Company's Whatley 1, southeast outpost for the Manziel 6300-foot Paluxy area, cemented pipe at 8880 feet after plugging back from 9005 feet, and will perforate oil saturation in Pettit at 8760-68 feet. Magnolia Petroleum Company's Lindley 1; near Yantis was drilling at 6780 feet. having tested water in Paluxy. Gulf Oil Corporation's Brewer 1, Winnsboro area was drilling at 8550 feet.

Harrison County: Hunt Oil Company is planning a deep test on 3030 acres leased from Mrs. W. C. Martin at Darco, 10 miles south of Marshall. D. G. Dunbar of Corsicana has leased 1450 acres from 7 to 10 miles southeast of Marshall, and additional leasing has been reported northeast of Marshall, where Continental Oil Company is planning a Travis Peak wildcat.

Cass County: Skelly Oil Company has shut down Baldwin 1, James Taylor survey, after testing salt water in Travis Peak at 6550-75 feet. The test, east of Kildare and north of the Rodessa field, was drilled to 6730 feet. In the Kildare field, Phillips Petroleum Company has completed Latham 1, B. W. Hopson survey, flowing 125 barrels on 5/16-inch choke from perforations at 6020-36 feet.

Marion County: Bradford and Sciavally's Victor Meyer 1, Miles Reed survey, west of Jefferson, projected 6300-foot wildcat, is below 5100 feet. Arkansas Louisiana Gas Company is deepening Walker 1, J. Humphries survey, once completed as a wet gasser at 5970 feet in Hill sand, to 7300 feet for test of other Rodessa series and the Pettit and Travis Peak.

Nacogdoches County: J. F. Lytle has made location, J. R. Summers 1, J. Reed survey, 9 miles east of Nacogdoches, to be drilled to 9000 feet in Travis Peak. The Texas Company's Pruitt 1, Ariola survey, was last reported drilling in Travis Peak at 8750 feet.

Panola County: Feazel and Kinsey have made location for Ross 1, A. Morman survey, two miles west and south of their Jordan 1, deep wet gas discovery west of Carthage. Roger Lacy's Cameron 1, LaGrone survey, is drilling below 5340 feet. Continental Oil Company's Burnet 1, Cheairs survey, wildcat northeast of Carthage, after drilling to 9306 feet, has set casing and is testing several show areas.

Southwest Texas

Large Structure Proved Near Old Muralla Field

New sands are being opened in a number of outposts on the lower coast. Taylor Refining Company, one of the more active smaller companies, has proved a new sand, or it may be classified a new field discovery, in Sepulveda 1, BS&F 297, a wildcat two miles northeast of Muralla field and one mile northeast of Agua Prieta production in Duval County, which flowed 6 barrels of oil hourly from perforations at 4073-78 feet. Salt water broke into the flow and the holes have been squeezed to shut off the water. This well proves a large structure in the area. The company recently opened a new gas pay in Sepulveda 1-A, 1 mile northeast of Muralla production in the west corner of Juan A. Ruiz survey 12. Location has been staked for another test of the new horizon.

San Patricio County: Texas Conservative Oil Company has completed gauge on Gaines 1, discovery of North Odem field two miles north of Odem townsite and three miles north of Odem field. It was perforated at 5430-36 feet and flowed 91 barrels of 21.8-gravity oil daily through ¼-inch choke, tubing pressure mounting to 200 pounds, casing pressure 600 pounds. Total depth is 7225 feet with 5½-inch casing set to 5700 feet. The company drilling Elliott 1, ½ mile northwest of the discovery.

Jim Wells County: Humble Oil & Refining Company is testing a wildcat 1½ miles southwest of Alfred and 1½ miles southeast of Alfred field that is opening a new field. San Antonio Joint Stock Land Bank 1, J. Wright survey 19, bottomed at 5373 feet, recovered 650 feet of 42.5-gravity oil on drill-stem test at 4950-54 feet, using 3/16-inch chokes top and bottom. Sand was logged at 4948-54 feet. This pay is around 250 feet deeper than the 4700-foot pay level in the Alfred field.

Fayette County: Continental Oil Company finally has established Wilcox sand production at Cistern. Gabitzsch 1 was perforated at 2867-70 feet and pumped 68 barrels of 17-gravity oil and 12 barrels of water daily. This well originally was completed as a dry gasser in perforations at 2808-18 feet, but was reworked and completed as an oil producer. With Wilcox sand topped at 1650 feet, the company recently completed Cockrill 1, ½ mile southeast of Gabitzsch 1, in Reklaw sand at 1187-91 feet.

McMullen County: Gulf Oil Corporation is preparing to set casing below 8000 feet in Shiner 1, Sidney Sherman survey, wildcat 14 miles south of Tilden, and bottomed at 8117 feet. Sidewall samples at 8000-06 feet showed a faint odor of oil or gas, but an attempted drill-stem test at that level failed. The hole is bottomed in Wilcox or Midway. Other sands logged up the hole may be tested.

Texas Permits

Permits for drilling 182 new wells in Texas were approved by the Railroad Commission last week. West Texas led the list with 47 locations and there were 35 in Southwest Texas.

North Texas reported 30 permits, there were 17 from the Gulf Coast, 16 from East Central Texas, and 12 from the Panhandle.

Texas Gulf Coast

Drilling Shows Gains On Coastal Prospects

Drilling is showing a sharp increase in Coastal areas, both wildcats and outpost locations being announced. Northern Ordnance Company has projected an 8000-foot wildcat 9 miles southeast of Navasota in Grimes County. It is Quinn 1 on a 1080-acre lease in S. F. Austin survey. Grimes is one of few counties in the area that does not produce oil, although several wildcats have been drilled on different prospects.

The Wilcox trend in Newton County will be tested by Gulf Oil Corporation's Kirby Lumber 1-A on a 2405-acre lease in B. Simmons survey 16, 2½ miles south of Call. This county likewise produces no oil or gas.

Montgomery County: Superior Oil Company's Frost 3 in A. Hodge survey has established the 11,570-foot sand level to production at Lake Creek. Perforated at 11,570-584 feet it flowed 195 barrels daily through 16/64-inch choke with 4,656,000 cubic feet of gas. This well, producing from Wilcox, is bottomed at 11,682 feet with casing set to bottom.

Colorado County: The Ohio Oil Company has completed its Cockfield discovery 5 miles southwest of Garwood. McDermott 1, based on a 6-hour test, flowed at daily rate of 98 barrels of 52.2-gravity distillate and 9,850,000 cubic feet of gas through ½-inch choke on tubing. Perforations were made in Cockfield at 6510-20 feet. Total depth is 7087 feet with 5½-inch casing set to 6853 feet.

Interesting Tests: Humble Oil & Refining Company is preparing to drill a 10,000-foot test in Livingston field area, Polk County, Granbury 7 on 5440-acre lease in Augustine Viesca survey. American Republics Corporation and Houston Oil Company will drill a 7750-foot wildcat 8 miles east of Village Mills, Hardin County.

Skelly Oil Company is preparing to drill two deep wildcats, Shephard Unit 1, 8 miles north of Manvel, Brazoria County, a 44-acre unit in Section 92, E. Little survey and Norris 1 on a 348-acre lease I. & G. N. 5, 4½ miles north of Bay City, Matagorda County. The latter is a projected 8500-foot test.

South Louisiana

Production Opened on Flank of Starks Dome

The major development along the Coastal belt is the opening of flank production at Starks in Calcasieu Parish. W. T. Barton's Lutcher-Moore 10, Section 13-9s-13w, is credited with finding several Miocene sands capable of producing. Although details have not been released, it flowed 112 barrels of 39-gravity oil daily through 3/32-inch choke from perforations at 8040-60 feet, tubing pressure 1650 pounds, casing 1300 pounds. Hole was drilled to 11,650 feet, casing set to 10,231 feet then plugged back to perforate.

St. Landry Parish: Humble Oil & Refining Company is completing an outpost in the Krotz Springs area with Prince et al 1, Section 25-6s-6e, flowing 20 barrels of condensate hourly through ¼-inch choke. This well, which is ½-mile southwest of Gulf Refining Company's discovery, is bottomed at 10,210 feet with casing cemented near that level.

Acadia Parish: Union Sulphur Company has controlled threatened blowout in a wildcat in Church Point area. Daigle 1, Section 49-7s-2e, showed kick at 9818 feet, and considerable mud was pumped in the hole to control the blow.

In the Branch area, Union Sulphur Company has projected another test, Gueno 3, Section 51-8s-2e. This area has been fairly active in recent months since discovery of first distillate production.

Wildcats: Humble Oil & Refining Company has announced location for a wildcat in southeast part of Cameron Parish, State Lease 568-Rockefeller 1, Section 30-16s-3w.

Pure Oil Company has abandoned State-Snake Lake 1, in east portion of Cameron Parish, Section 25-13s-3w, at 11,301 feet. The well attempted to blow out from around total depth and stuck the 7-inch casing set at 10,163 feet. Operator was unable to retrieve the pipe and clean the hole.

Deep Tests: Three wells in Terrebonne Parish are nearing interesting stages. Gulf Refining Company's South Shore 1, wildcat in Presque Isle area, is drilling below 12,210 feet in shale. Union Producing Company's Buckley-Bourge 2, Section 1-20s-16e, in DeLarge area, is drilling below 11,150 feet in shale. Superior Oil Company is drilling below protection casing set at 11,278 feet in Continental Land & Fur 1, Section 30-18s-14e, at Bayou Penchant.

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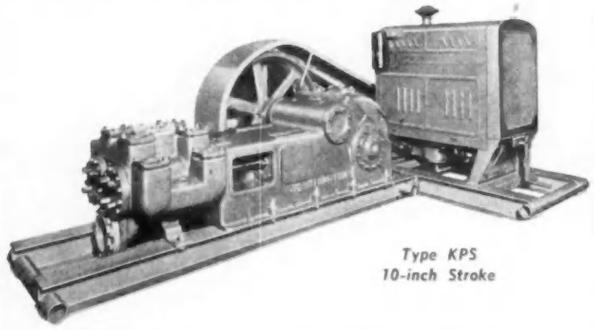

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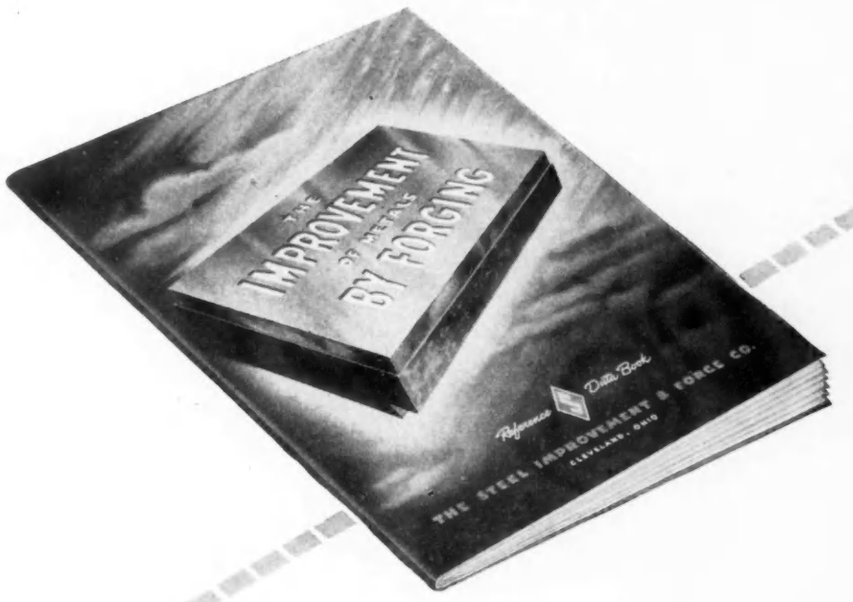

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North Louisiana

Twelve Operations in Revived Holly Field

Development of the Wilcox discovery area two miles northwest of deep production in the Holly Ridge field in Tensas Parish received a setback with failure of Chicago Mill & Lumber Company's Mutual 2, SE SE 12-11n-9e, south of the same company's Mutual 1, NE SE 12-11n-9e, which has been shut in after flowing 120 barrels from perforations at 3012-25 feet.

Two miles northeast of Holly Ridge production, Sohio Producing Company's Penrod-Jordan 1, SE SW 8-11n-10e, after sidetracking, has resumed drilling and is nearing Shelly sand production level at 8124 feet. Stanolind Oil & Gas Company and Carter Oil Company's Smith-Glover 1, NW SE 19-11n-10e, south offset, has cleared hole after a fishing job at 7700 feet and is setting a middle string of casing to resume drilling. Carter Oil Company's Mark 1, NW NW 19-11n-10e, was nearing completion when shut down for repairs at 8375 feet.

De Soto Parish: Five locations have been made, four eastern outposts, bringing the total of operations to 12 in the revived Holly field since Texas Minerals Land Company reopened the field by completion of E. L. Scott 1, SW SW NW 33-14n-13w, at the 2784-52-foot level. Four offsets have reached production depth and are being tested.

Concordia Parish: Royal Petroleum Corporation's Canebrake 1, 1-8n-10e, was drilling below 8808 feet.

De Soto Parish: Superior Oil Company was last reported coring at 5108 feet at Mansfield 1, NE NW 24-11n-11w.

La Salle Parish: Placid Oil Company's Tremont F-1, C NW NW 14-9n-2e, was drilling at 7847 feet.

Arkansas

Discovery Near Schuler Is Now Testing Oil

Three items of interest divided the attention of oil men last week in Arkansas: the newly discovered Wilks pool in Union County, the possibility of opening lime production in the old Smackover field, and recompletion of Arkansas's first discovery of the year, Atlantic Refining Company's gasser, Mahoney and Murphy 1, NE SW 2-18s-18w, two miles northwest of the Schuler field. It was first brought in as a 50,000,000 foot gas well after perforations at 7847-52 feet. Squeezed off and reperforated at 7861-63, it is now testing oil at the rate of 75 barrels of 44-gravity a day, with a gas-oil ratio over 10,000/1.

Tide Water Associated Oil Company's Pearce 1, a wildcat NW NW 10-17s-20w, recovered saturated Smackover lime, and production pipe has been set a foot above bottom at 8290 feet. Top of lime was reached at 8238 feet and top of porosity at 8263 feet. Cotton Valley was reached at 6089 feet and a little porosity at 6460 feet, but it was not promising as a Cotton Valley producer. The well is 3 miles west of the nearest production in the west extension of Atlanta field and 7½ miles southwest of Magnolia.

California

Only Successful Wildcat Extends Mountain View

A south extension of Mountain View field, Kern County, not yet possible to classify as of more than minor significance, was the week's only successful wildcat result. Three other tests, one in Fresno County and two in Kern County were abandoned. Five starts were made.

Kern County: Possibilities of the Stockdale area will be thoroughly tested by Western Gulf Oil Company's wildcat, KCL 77-5, 5-30-27. Primary objective is the equivalent of the Stevens sand, expected to be found about the 11,000-ft. level.

Los Angeles County: Prospects for new deep-zone production in Inglewood field have been dimmed by Standard Oil Company's deep test, Baldwin Cienega 105. With depth now more than 11,250 ft., no showings have been reported below the Sentous sand.

Orange County: A new play seeking an undersea pool offshore from the town of Seal Beach has been started by Gilco Corporation, with the leasing of a sizeable block of submerged state lands and preparations to drill a first test from a location west of the Flood Control channel and north of the Pacific Electric Railway tract.

Owners of adjacent Huntington Beach properties are interested in the announcement of a deep test of that field, to be drilled on the Rex Oil Company property by Treasure Hill Company. The latter proposes to take over an old Rex well, present bottom 5,063 feet and carry it on down to about 10,000 feet.

Rocky Mountain Area

Gage Field Extension; Well Spudded in at McElmo Dome

The Gage field in Musselshell County, Montana, was extended by Northern Ordnance's Darr 1, C SW NW 14-9n-26e, which flowed 100 barrels in 7 hours and then swabbed and flowed 30 barrels of 33.9-gravity oil per hour. Top of the Amsden was logged at 6087 feet and the hole was drilled 38 feet into the lime to 6125 feet. Capacity of the well is estimated at 500 barrels per day, as testing continues. It is located a mile northeast of the discovery well, drilled last December by Northern Ordnance, which pumped 25 barrels initially from the Amsden at 5965-6100 feet after drilling to 7495 feet, 100 feet in the Madison. Northern Ordnance acquired its acreage from Carter Oil Company subject to an overriding royalty.

McElmo Dome: Stanolind Oil & Gas Company spudded Government 1, C SW NW 24-36n-18w, deep Pennsylvanian test on the McElmo structure in Montezuma County, Colorado. The well is ¼ mile east and ¾ mile south of a test drilled in 1921 by Midwest Refining Company which had encouraging showings of oil and gas and was abandoned at 4588 feet. The area involved in the folding of the anticline is 20 miles long and 8 miles wide with a structural closure of 450 feet.

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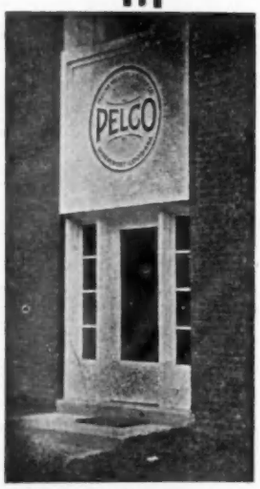

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Navajo County—Failure: Continental-Union Oil (Cal)'s Aztec 1, ne ne ne 19-15n-19e, elev 6125 ft, abnd 3850 ft.

ARKANSAS

Columbia County—Stephens-Smart: G. H. Vaughn's W. G. Taylor 2, c nw se nw 12-15-20, pump 200 bbls fr Travis Peak, 3500 ft.

ARKANSAS WILDCAT

Nevada County—Failure: Magnolia's Lester A-1, c ne se 36-14-20, Smackover lime test, salt wtr, abnd 5370 ft.

CALIFORNIA

Fresno County—Coalinga: Standard's 33-3C, nw ne ne 3-20-15, pump 78 bbls 20.6-gr, 144 ft perf 2917 ft, td 3000 ft, pb 2922 ft.

Tide Water's Pantheon 65, se ne nw 32-19-15, pump 77 bbls 17-gr oil, 9 wtr, perf 2562-09, 2479-28 ft, td 2565 ft.

Westates Pet. Corp.'s Commercial 24, nw se ne 31-19-15, pump 20 bbls 14-gr oil, 10 wtr, 20 ft perf 1820 ft, td 1850 ft, pb 1820 ft.

Fresno County—Lamare: Amerada's Calif. Lands 65-15, ne nw se 15-17-18, flow no est, 42 ft perf 8060 ft, oil sand 8022 ft, td 8200 ft, pb 8060 ft.

Fresno County—Riverdale: Amerada's Zanolini 27-23, ne sw sw 28-17-19, flow no est, perf 7840-66, 7896-7930 ft, td 7930 ft.

Kern County—Belridge, North: Belridge Oil Co.'s 37-1, ne ne sw 1-28-20, flow 326 bbls 28.9-gr oil, 480,000 gas, 86/64-in, 300/265 lbs, perf 8031-8143, 8185-8400 ft, top deep sand 8022 ft, td 9494 ft, pb 8400 ft.

Kern County—Belridge, South: Belridge Oil Co.'s 24A-28, se sw nw 28-28-21, pump 75 bbls 15.3-gr, perf 1049-1245 ft, td 1500 ft, pb 1295 ft.

Belridge Oil Co.'s 45-34, ne ne sw 34-28-21, pump 50 bbls 16.3-gr, perf 452-932 ft, td 975 ft.

General Pet. Corp.'s 56-2, se sw ne 2-29-21, pump 60 bbls 13.8-gr oil, 6 wtr, perf 559-579, 609-40, 703-800, 880-99 ft, td 900 ft.

Shell's T. W. A. 14, nw ne sw 1-29-21, pump 54 bbls oil, 58 wtr, perf 1199-92, 1158-1091, 1045-11, 984-53 ft, td 1200 ft.

Kern County — Edison: Tracy Harkness' Seale 2, sw nw nw 5-30-29, pump no est, 116 ft perf 4216 ft, td 4217 ft.

Kern County—Kern Front: Standard's 10-2, sw ne ne 21-28-27, pump 6 bbls 12-gr oil, 294 wtr, 140 ft perf 2520 ft, td 2525 ft.

Standard's 10-5-27, sw se ne 27-28-27, pump 54 bbls 13.2-gr oil, 36 wtr, 314 ft perf 2495 ft, td 2500 ft.

Kern County — Kern River: Tide Water's Kern Oil Dev. 3, sw sw nw 30-28-28, pump 35 bbls 14-gr oil, 40 wtr, 334 ft perf 1204 ft, td 1206 ft.

Kern County—McKittrick: Standard's 113-7, se nw se 7-30-22, pump 6 bbls 12.2-gr oil, 24 sand and wtr, perf 1954-2040 ft, td 2110 ft.

Kern County—Midway-Sunset: North American Oil Con.'s 76, sw nw ne 16-32-23, pump 25 bbls 15.8-gr oil, 25 wtr, 149 ft perf 1554 ft, td 1575 ft.

Kern County — Sharktooth: Bandini Pet. Corp.'s Signal-Garner 4, ne sw sw 24-28-28, pump 359 bbls 14.5-gr, 17 ft perf 2489 ft, Vedder 2473 ft, td 2489 ft.

Los Angeles County — Wilmington: (Old well deepened) Richfield's Pacific Dock 7, 2208 ft sly on e/l ppty fr nec th 1000 ft wly at r/a, pump 313 bbls 26.5-gr oil, 27 wtr, 226 ft perf 4432 ft, otd 4235 ft, redrld 4435 ft.

Union Pacific's 222, 8153 ft s 335 ft e c/l Ford and Anaheim, 9-5-13, flow no est, 336 ft perf 3606 ft, td 3613 ft, pb 3600 ft.

Orange County—Huntington Beach: Nicholai & Becker's Fee 1, 160 ft n 310 ft w c/l Florida and Garfield, 35-5-11, pump 115 bbls 18-gr oil, 12 wtr, 48 ft perf 3809 ft, first comp fr td 3785 ft, sdd up, redrld 3809 ft.

Ventura County—Shiells Canyon: Texas Co.'s 144, ne nw sw 4-3-19, pump 45 bbls 32-gr, perf 2414-2747 ft, td 2805 ft.

Ventura County — Ventura Avenue: Tide Water's V. L. & W. 65, 150 ft n 10,971 ft e R. C. L. cor No. 11, flow 1411 bbls 30-gr oil, 1,644,000 gas, 128/64-in, 80/825 lbs, 600 ft perf 10,075 ft, td 10,080 ft.

CALIFORNIA WILDCATS

Fresno County—Failure: Shell's S. P. 73-35, ne se ne 35-15-15, Nicholson area, abnd 8100 ft.

Kern County—Failures: Continental's Easton 1, se ne se 33-29-26, McClung area, abnd 8214 ft.

Standard's Monarch 26-20L, sw se sw 26-12-24, Midway-Sunset area, hard shale, abnd 3395 ft.

Kern County—Extension: Di Giorgio Fruit Co.'s 48-10, se se sw 10-31-29, Mountain View area, pump 42 bbls 26.7-gr oil, 8 wtr, perf 6122-35 ft, td 6418 ft.

ILLINOIS

Bond County: B. F. Thompson's Follett 1, se sw nw 31-4n-2w, Ben 1112-20 ft, 40 bbls, 1124 ft.

Clay County: Texas' J. W. Williams 1, se nw ne 22-5n-5e, Av 2308-17 ft, 41 bbls, 2319 ft.

Edwards County: Superior's H. Earhart 2, se se se 25-2s-10e, Walts 2373-2403 ft, 237 bbls, 3066 ft.

Franklin County: Sohio-Nash Redwine's E. Taylor 2, nw sw nw 21-5s-3e, abnd 3138 ft.

Hamilton County: Texas' P. St. Clair 1, se ne sw 13-6s-6e, TS 2455-69 ft, 27 bbls, 2470 ft.

Carriers Inc.'s Irwin 3, nw nw ne 35-6s-6e, abnd 3118 ft.

J. W. Menhall's Harrawood 2, sw sw se 18-6s-7e, Cyp 2750-75 ft, 200 bbls, 2785 ft.

Texas' A. Wheeler 6, nw nw nw 19-6s-7e, TS 2429-50 ft, 119 bbls, 2450 ft.

Jasper County: Gulf's C. Bayse 1, se se nw 28-6n-9e, abnd 3124 ft.

Jefferson County: J. W. Murchison's Jeff Liquid Corp. 1, nw nw nw 2-4s-2e, abnd 2925 ft.

Gulf's Shaffer 1, e½ ne se 13-1s-3e, L O'H 2715-21 ft, McCl 2776-79 ft, 2791-95 ft, 78 bbls, 2921 ft.

Madison County: Oberling & Bryant's J. Gross 3, ne nw ne 34-3n-6w, Trenton 2306-24 ft, 208 bbls, 2324 ft.

Wabash County: A. Baldwin's G. Dunkel 2, ne se nw 5-1s-12w, Penn 1531-39 ft, 1543-49 ft, 1557-63 ft, 75 bbls, td 2032 ft.

Magnolia's Campbell Heirs 7, ne ne ne 7-1s-12w, Cyp 2025-31 ft, 2071-2108 ft, 64 bbls, 2108 ft.

C. E. Skiles' Elkins 3, ne nw ne 29-2s-13w, abnd 1770 ft.

Sohio's M. Kerwin 2-X, sw sw nw 14-3s-14w, A V 2780-93 ft, 37 bbls, 2793 ft.

Wayne County: Cities Service's Rudger 2, se se ne 32-2s-9e, McCl 3305-16 ft, 412 bbls, 3372 ft.

Deep Rock's J. P. Moore 1, se ne sw 32-2s-9e, Rosi 3277-80 ft, 30 bbls, 3351 ft.

Pure's Fitch-Brown Cons. 1, ne nw 23-1n-8e, McCl 3054-69 ft, 3107-09 ft, 3131-32 ft, 420 bbls, 3140 ft.

J. P. Washburn's Jordon 4, nw ne sw 34-2n-7e, AV 2951-53 ft, 125 bbls, 2966 ft.

White County: C. E. Skiles' T. H. Murphy 1, se ne nw 25-3s-10e, abnd 3171 ft.

Superior's E. M. Fitton 34, sw sw sw 15-4s-14w, abnd 2876 ft.

Sohio's W. W. Grey Heirs 10, nw se nw 17-4s-14w, abnd 2871 ft.

Superior's H. C. Ford et al E-2, sw ne ne 34-1s-14w, TS 2186-96 ft, Cyp 2590-96 ft, 130 bbls, 2838 ft.

Continental's Glen Brown 2, ne se nw 25-5s-10e, Ben 2819-45 ft, AV 2940-66 ft, 53 bbls, 2966 ft.

ILLINOIS WILDCATS

Clay County—Failure: H. E. Sloan et al's Schnell 1, nw ne ne 25-4n-7e, abnd 2367 ft.

Franklin County — Discovery: Sohio-Nash Redwine's E. Mitchell 1, nw ne sw 21-5s-3e, St Louis 3079-86 ft, 3110-20 ft, 68 bbls, 3126 ft.

Hamilton County — Failure: William M. Layton's J. Jurgens 1, sw se 28-4s-6e, abnd 3500 ft.

Jasper County—Failure: O. W. Dickerson's F. Culp 1, c e½ ne ne 35-6n-9w, abnd lcn.

White County—Failure: W. G. Fortner's E. T. Questell 1, ne sw nw 23-5s-9e, abnd 3282 ft.

INDIANA

Posey County: Sun's Hugh Wiseman 1, sw ne nw 27-6s-14w, abnd 2972 ft.

Carter's Skiles 2, ne sw ne 15-8s-15w, AV 2650-65 ft, 66 bbls, 2671 ft.

Spencer County: W. B. Bakeman's W. Silverthorn 1, nw se sw 8-6s-4w, abnd 916 ft.

Wabash County: Joseph Minnect's Maude Barnett 1, se se ne 23-27n-5e, Trenton 848-60 ft, 5 bbls, 860 ft.

INDIANA WILDCAT

Posey County—Discovery: Sells Pet. Co.'s Wade 1, se sw ne 14-5s-14w, Hds 2446-65 ft, 300 bbls, 2469 ft.

KANSAS

Barber County — Medicine Lodge: Barbara Oil's Laswell 3, cen nw¼ 29-33s-13w, Miss Chat 4782 ft, perf casing 1,200,000 CF gas, 5045 ft.

Barton County — Kraft-Prusa: Black-Marshall's Dolechek 1, ne ne¼ 26-16s-12w, Gorham sand 3349 ft, no shows, abnd 3387 ft.

Butler County—Eldorado: Cities Service's Mills 18, sw nw sw¼ 22-25s-5e, Marmaton 2190 ft, perf casing 2000 gals acid, pump 51 bbls oil and 20 bbls wtr, td 2215 ft, pb to 2029 ft.

Cowley County—Frog Hollow: Derb Oil's T. Schumper 1, cen se nw¼ 17-32s-5e, Miss 3156 ft, hole full wtr, abnd 3180 ft.

Cowley County—Rahn: Summit Drlg.'s M. Waldschmidt 1, sw sw sw¼ 6-34s-6e, Miss 3017-28 ft, no shows, abnd 3028 ft.

Ellis County — Riverview: Stanolind's McNeley 2, se se ne¼ 30-11s-18w, top cong 3576 ft, no shows, abnd 3690 ft.

Ellsworth County—Wilkens: C. E. Ash &

Wells Completed in United States in Week Ended February 5, 1944

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Arizona									1	1	1		1	
Arkansas	2			1	3			1		1	4	2	16	17
California	21				21	1	1		3	4	26	38	171	110
Colorado												1	2	5
Illinois	17			8	25		1		4	5	30	35	217	181
Indiana	2			2	4		1			1	5	6	34	28
Iowa														1
Kansas	18	1		12	31	1			11	11	43	44	225	137
Kentucky	4			6	10				2	2	12	14	53	22
Louisiana	7	2		2	11	1			2	2	14	5	57	52
North Louisiana	2	2			4				2	2	6		16	16
South Louisiana	5			2	7	1					8	5	41	36
Michigan	3	2		2	7				1	1	8	12	62	39
Mississippi													3	5
Missouri													2	1
Montana	1				1						1	6	27	34
Nebraska				1	1						1	1	7	4
New Mexico	8			2	10				1	1	11	7	46	23
New York	15		10		25						25		122	125
Ohio	4	1		4	9						9	10	52	96
Oklahoma	14	1		4	19	3	1		4	5	27	23	160	149
Pennsylvania	28	3	14		45						45	54	256	239
Tennessee													1	1
Texas	57		1	17	75	3	4	1	20	25	103	84	530	366
E.Tex.Bor. Co.'s	1				1						1		1	1
Rest of E. Texas	2		1		3				4	4	7	2	32	21
North Texas	17			7	24	1			6	6	31	17	120	84
W. Central Tex.	3			1	4				2	2	6	8	38	29
West Texas	13			1	14	2			2	2	18	30	130	79
Tex. Panhandle	3				3						3	2	17	27
G. Coast, Upper	7				7				2	2	9	7	47	24
G. Coast, Lower	7			7	14		4		2	6	20	9	97	50
Southwest Texas	2				2			1	1	2	4	9	40	44
S. Central Texas	2			1	3				1	1	4		8	7
West Virginia	5	8		1	14						14	15	106	73
Wyoming	1				1						1	4	15	25
Total U.S.	207	18	25	62	312	9	8	2	49	59	380	361	2,165	1,733

* Includes distillate wells. † Includes salt water disposal wells.

The OIL WEEKLY'S TRADING POST

USED EQUIPMENT FORUM

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■ FOR SALE—Complete Drilling Rig
- 1 New 14 x 14 Ideal Ajax engine
- 1 9" Emsco draw works with hydromatic brakes
- 1 New 20" Wilson-Snyder pump
- 2 18" Wilson-Snyder pumps (completely overhauled)
- 1 New giant 350 ton IDECO traveling block
- 1 New IDECO 5-sheave 350 ton crown block with interchangeable sheaves with traveling block
- 3 125 x 300 Kewanee boilers with 2—10 x 4½ x 10 National Transit boiler feed pump units with 1—10 x 4½ x 10 Worthington pump
- 1 20½" fully oil bath Emsco rotary
- 1 122' 535,000 lb. capacity Lee C. Moore derrick
- 1 8' steel substructure with all timbers

9100' 4½" 16.60 lb. regular Acme full hole drill pipe
- 2 7¼ x 20' drill collars, all necessary subs
- 1 20' type J. Hughes conventional core barrel
- 1 4½" B J elevator
- 1 Set B J elevator bails
- 1 3 K. W. Moon generator

2000' 1⅛" Wickwire-Spencer drilling line
10000' 9/16" galvanized coring line
- 1 7' x 12' steel tool house
- 1 7' x 15' clothes changing house
- 1 4½" with 3" horse cocks Goodall hose
- 1 Type a 300 ton Union Tool Company swivel
- 1 10" Union Tool Company hook
- 1 40' x 4½" Baash-Ross kelly with drive bushings
- 1 Link belt shale shaker
- 1 10¾" x 3000 lb. W.P. Cameron blowout preventer fluid closed and manually opened with 1500 series API regular grooved flanges on both sides

All merco stops on mud manifold rigged up with 4" 6000 lb. Thornhill-Craver unibolt union, 4" steel lines from boiler to rig with unions on each joint, casing and pipe racks of fir timber.

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■ LEASE BLOCK (720 A.) semi-proven; sands 970' and 1640'; offsetting 200 bbl. discovery well, 41-G. Close to production and refinery. Sell for development or trade part for well. Geologist, 912 So. 2nd, Lawton, Okla.

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Trading Post Section. THE OIL WEEKLY
P. O. Box 2608 Houston 1, Texas

Phillips' Splitter 4, c se sw¼ 19-17s-9w, Arbuckle 3257 ft, DST 3274-86 ft, open 30 min, rec 220 ft wtr, abnd 3286 ft.

Greenwood County—North Virgil: Jackman & Jackman's Frankhouser 3, sw nw nw¼ 16-23s-13e, Miss lime 1770 ft, pump 5 bbls oil & 8 bbls wtr, 1780 ft.

Greenwood County — Thrall-Agard: Trojan Oil & Gas' Hoverson 3, se ne nw¼ 26-24s-9e, Bartlesville 2090 ft, shot 60 qts, pump 15 bbls oil, 2137 ft.

Greenwood County—Gilroy: Becker & Steward's Cannon 1, sw sw se¼ 12-25s-12e, Squirrel sand 1367 ft, swab 1¼ bbls oil & 10 bbls wtr in 2 days, abnd 1377 ft.

Jefferson County—McLouth: Ed. Jackson's McLeod 5, ne sw se¼ 5-10s-20e, Miss 1576 ft, 2000 gals acid, pump 20 bbls fluid with very small show oil in 40 min, abnd 1685 ft.

McPherson County—Heane: Bay Pet.'s Anderson 1, nw se ne¼ 21-17s-1w, Miss 2669 ft, 500 gals acid fill up 100 ft wtr per hour, abnd 2685 ft.

McPherson County—Paden: Phillips Pet.'s Wining 2, sw ne sw¼ 10-18s-1w, Miss 2666 ft, pump 503 bbls oil and no wtr, 2674 ft.

McPherson County—North Canton: E. K. Carey's Geo. Schultz 1, c n½ ne se¼ 35-18s-1w, Chat 2859 ft, pump 35 bbls oil & 35 bbls wtr, 2880 ft.

Phillips County—Hanson: Skelly's Graham 3, sw se ne¼ 22-5s-20w, Arbuckle 3522 ft, 2250 gals acid, pump 102 bbls oil, 3555 ft.

Pratt County—North Stark: Atlantic's Stark 1, c ne nw¼ 18-26s-11w, Cherty Viola 4191 ft, perf casing, pump 202 bbls oil & 18 bbls wtr, 4209 ft.

Rice County—Volkland: Texas' O. Saugster 1, c sw ne¼ 27-18s-9w, in Arbuckle, pump 309 bbls oil, 3260 ft.

Rice County—Chase: B & R's Van Boskirk 1, sw nw se¼ 3-19s-9w, cong 3230 ft, no shows, abnd 3265 ft.

Rice County — Silica: Stanolind's Henrich Roth 1, ne sw ne¼ 29-19s-10w, Lansing 2952 ft, perf casing 3000 gals acid, pump & flow 350 bbls oil through tbg, 3227 ft.

Rice County—Keesling: Phillips Pet.'s Proffitt 4, c nw ne¼ 8-20s-9w, Arbuckle 3228 ft, 500 gals acid, pump 167 bbls oil & 29 bbls wtr, 3258 ft.

Rooks County—Barry: Continental's Dan Barry "B" 2, ne se sw¼ 2-9s-19w, Arbuckle 3411-13 ft, swab 60 bbls oil per hour through tbg, echo test 41,774 bbls oil, 3438 ft.

Russell County—Hall-Gurney: Texas' E. P. Gurney 5, c w½ ne ne¼ 23-14s-14w, in Lansing, pump 293 bbls oil, 2995 ft.

Russell County—West Greenvale: Jones & Shelbourne's Hupfer 3, c s½ se nw¼, Gorham 3110 ft, pay 3119-20 ft, pump 77 bbls oil & no wtr, 3122 ft.

Russell County—Gorham: Stanolind's Wm. J. Smith 1, nw sw sw 14-14s-15w, Reagan sand 3197 ft, swab 165 bbls wtr & 8 bbls oil in 11 hrs, abnd 3200 ft.

Russell County—Unnamed: Cities Service's K. Janne 1, c ne se 23-15s-12w, Arbuckle 3327 ft, slight stains 3357 ft, abnd 3357 ft.

Russell County—Forrest Hill: Shell's Luerman 1, nw nw se¼ 28-15s-12w, Arbuckle 3276-79 ft, swab 86 bbls oil in 2 hrs through tbg, depth test 2191 bbls oil and 22 bbls wtr, 3294 ft.

Russell County—Trapp: Sohio's Anschutz 4, ne se nw¼ 10-15s-13w, Arbuckle 3327 ft, 4000 gals acid, showed salt wtr, abnd 3342 ft.

N. Appleman & National's Meharg 1, sw sw se¼ 18-15s-13w, Arbuckle 3269 ft, pump 348 bbls oil & 7 bbls wtr, 3274 ft.

Saline County—Hunter: Deep Rock's Frank Norton 3, ne ne nw¼ 20-16s-1w, Miss 2667 ft, pump 100 bbls oil & no wtr, 2682 ft.

Stafford County—Zenith: D. R. M. Richardson 2, c e½ se nw¼ 22-24s-11w, Viola 3817 ft, perf casing, 1000 gals acid, pump 76 bbls oil, td 3893 ft, pb to 3876 ft.

Trego County — Ellis: Bridgeport's Gugler 3A, c w½ sw se¼ 36-12s-21w, Arbuckle 3835 ft, 600 gals acid, pump 277 bbls oil & 119 bbls wtr, 3856 ft.

KANSAS WELL DEEPENED

Russell County—Hall Gurney: Mid-Continent's Letsch 5, se se nw 26-14s-13w, Reagan 3235 ft, granite 3335 ft swd, otd 2880 ft, td 3335 ft.

KANSAS WILDCATS

Barton County—Failures: Plains Exploration Co.'s Murdy 1, sw sw nw 6-18s-13w, Arb 3311 ft, sso 3322-25 ft, abnd 3332 ft.

Vickers' Kent 1, ne nw ne 31-19s-13w, Topeka 2847 ft, Heebner 3104 ft, Base Oread 3126 ft, B Lime 3184 ft, White Lans 3198 ft, 3278-3301 ft, Base K. C. 3401 ft, Cherty Cong 3430 ft, Arb 3476 ft, abnd 3530 ft.

Cowley County—Failure: W. G. Talbott's S. C. Hann 1, ne se nw 22-31s-3e, Topeka 1320 ft, Stalnacker 2140 ft, K. C. 2542 ft, Miss 3105 ft, Arb 3417 ft, abnd 3429 ft.

Greenwood County—Failure: C. F. Blankenship's Clark 1, nw ne sw 3-22s-13e, Farm Loan expired, temp abnd 200 ft.

Kiowa County—Failure: Aladdin Pet. Co.'s Piester 1, sw sw nw 24-29s-16w, Lans 4064 ft, sso 4098-99 ft, Sd 4574-76 ft, sso 4576-89 ft, Arb 4957 ft, abnd 4991 ft.

Marshall County—Failure: B. B. Blair's Cox 1, c sw sw 10-4s-7e, Lans 1082 ft, Base K. C. 1331 ft, Hunton 1445 ft, Sylvan shale 1760 ft, Viola 1804 ft, Simp 1993 ft, Reagan 2117 ft, abnd 2175 ft.

McPherson County — Failures: Phil - Han -

. . . YOUR 4TH WAR LOAN QUOTA

WHETHER your plant meets its quota, or fails, lies largely in *your* hands. Your leadership can put it over—but if you haven't already got a smooth running, hard hitting War Loan Organization at work in your plant, there's not a minute to lose.

Take over the active direction of this drive to meet —*and break*—your plant's quota. And see to it that every one of your associates, from plant superintendent to foreman, goes all-out for Victory!

To meet your plant's quota means that you'll have to hold your present Pay-Roll Deduction Plan payments at their all-time high—plus such additional amounts as your local War Finance Committee has assigned to you. In most cases this will mean the sale of *at least* one $100 bond per worker. It means having a fast-cracking sales organization, geared to reach personally and effectively every individual in your plant. And it means hammering right along until you've reached a 100% record in those *extra* $100 —or better—bonds!

And while you're at it, now's a good time to check those special cases—*growing more numerous every day*—where increased *family* incomes make possible, *and imperative,* far greater than usual investment through your plant's Pay-Roll Deduction Plan. Indeed, so common are the cases of two, three, or even more, wage-earners in a single family, that you'll do well to forget having ever heard of '10%' as a reasonable investment. Why, for thousands of these 'multiple-income' families 10% or 15% represents but a paltry fraction of an investment which should be runr ing at 25%, 50%, or more!

After the way you've gone at your wartime *production* quotas—and topped them every time—you're certainly not going to let anything stand in the way of your plant's breaking its quota for the 4th War Loan! Particularly since all you are being asked to do is to sell your own people the finest investment in the world—*their own share in Victory!*

LET'S ALL BACK THE ATTACK!

This space contributed to Victory by

THE OIL WEEKLY

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council.

Phillips' Duvall 1, sw ne ne 21-18s-1w, Miss 2748 ft, abnd 2780 ft.

Appleman et al's Gomer 1, se sw ne 23-18s-5w, Arb 3900 ft, Kinderhook 3532 ft, X Viola 3778 ft, Simp 3824 ft, Simp shale 3829 ft, Simp Dol. 3834 ft, abnd 3925 ft.

Pratt County—Failure: Biship Oil's Hensley 1, ne se ne 23-26s-14w, Kinderhook sd 4352-60 ft, Viola 4386 ft, Simp 4441 ft, Arb 4523 ft, abnd 4574 ft.

Rice County—Failure: Great Lakes' Sylvia Reiff 1, se nw nw 17-18s-10w, Arb 3308 ft, abnd 3340 ft.

Stafford County — Failure: Helmerick & Payne's Zimmerman 1, 29-23s-13w, Lans 3536 ft, sso 3655-61 ft, 3669-74 ft, Base K. C. 3790 ft, Cong 3858 ft, Viola 3875 ft, Simp sh 3958 ft, abnd 4040 ft.

KENTUCKY

Daviess County: O. D. Vickers et al's Hudson, 24-M-29, abnd 1234 ft.

Henderson County: Carter's Culver Oil & Mineral 5, 24-P-21, Walt 1723-37 ft, 257 bbls, 1737 ft.

E. F. Jarvis & Marcell's Busrod 1, 3-P-24, abnd 2515 ft.

Sohio's L. Wimsatt 1 (2), 20-P-27, abnd 1350 ft.

W. F. Lacey's Clore 3, 16-Q-22, TS 1849-53 ft, 100 bbls, 1862 ft.

Ohio County: Jack Anton et al's W. C. Hoover 1, 17-M-32, abnd 998 ft.

Union County: Sun's William Morgan 5, 20-O-19, Walt 1786-94 ft, 1798 ft.

Webster County: A. V. Smith et al's Betty Herrons 1, 24-M-21, abnd 110 ft.

Cherry & Kidd's Sellars 3, 14-N-24, TS 1848-65 ft, 200 bbls, 2230 ft.

Cherry & Kidd's Sellars 4, 14-N-24, abnd 2229 ft.

KENTUCKY WILDCATS

Butler County—Failure: Fulk & Clark's Van Fleet 1, 2-h-32, abnd 735 ft.

Ohio County—Failure: Kingwood Oil Co.'s E. Curtiss 1, 4-J-31, abnd 2147 ft.

NORTH LOUISIANA

De Soto Parish: Texas Mineral Lands Co.'s Lee 1, nw nw sw 33-14n-13w, flow 25 bbls, Woodbine 2779, td 2813 ft.

Caddo Parish—Caddo Pine Island: T. H. Wilkerson's Spell 3, c se nw 35-22n-16w, flow 150 bbls, perf 2438-44 ft.

Moorehouse Parish — Monroe Gas Field: United Carbon Co.'s Snyder 2, 20-21n-5e, 243,000 gas, 495 lbs.

Lincoln Parish—Simsboro Gas Field: Arkansas Louisiana Gas Co.'s Hayes 1, sw se sw 11-17n-4w, comp and shut in, perf 6590-618, 190 shots, td 6709 ft.

NORTH LOUISIANA WILDCATS

Tensas Parish—Failure: Chicago Mill and Lumber Co.'s Mutual 2, se se 12-11n-9e, s of Mutual 1 testing as Wilcox discovery, abnd Wilcox 3100 ft.

Union Parish — Failure: Westgate-Greenland's Frost Lumber Co. 1, 26-22n-1e, abnd 5033 ft.

SOUTH LOUISIANA

Calcasieu Parish—Vinton: Gulf's Gray 1-D, 330 ft s&e of nw cor sw ne 34-10s-12w, 5½-in 5896 ft, perf 5396-5406 ft, 153 bbls, ⅛-in, td 5896 ft.

Union Sulphur's Weeks Unit 1, 330 ft s&e of nw cor se nw 33-10s-12w, 7-in 5408 ft, perf 5340-60 ft, 132 bbls, ⅛-in, td 5601 ft.

Jefferson Parish—Delta Farms: Texas Co.'s State Lse 356-6, 4134 ft s 3233 ft e of nw cor sec 6 in Bayou Perot T-17s-23e, 5½-in 9767 ft, perf 9597-9607 ft, 195 bbls, ⅛-in, td 9767 ft.

St. Landry Parish — Port Barre: William Hellis' Futral 5, 7213 ft n 8° 30 mins e, 4h 455 ft s 72° e to lcn fr sw cor sec 20, 20-6s-5e, 7-in 6771 ft, perf 6562-80 ft, 160 bbls, ⅛-in, td 6808 ft.

St. Mary Parish — Cote Blanche Island: Texas Co.'s State-Cote Blanche 5, 8010 ft due e fr USCGS Mon "Bluff" in West Cote Blanche Bay, abnd 11,515 ft.

SOUTH LOUISIANA WILDCATS

Calcasieu Parish—Discovery: W. T. Burton's Lutcher-Moore 10, 2005 ft s 00° 17 mins w, th due w 1980 ft fr ne cor 13-9s-13w, 7-in 10,231 ft, perf 8040-60 ft, 113 bbls 39.1-gr, 3/32-in, td 11,649 ft. Opens prodn on Starks flank.

Cameron Parish — Failure: Pure's State-Snake Lake 1, 3650 ft s 100 ft e of nw cor 25-13s-3w, Snake Lake prospect, abnd 11,301 ft.

SOUTH LOUISIANA WORKOVER

Evangeline Parish — Pine Prairie: E. J. Nicklos Drilling Co.'s Reed 3, 330 ft fr sl os lse in 36-3s-1w, otd 7631 ft, dr 8133 ft, perf 8070-90 ft, acidized, flow 211 bbls, 10/64-in, td 8133 ft.

MICHIGAN

Allegan County—Fillmore: Regal Dutch's Dykhuis 1, nw sw nw 2-4n-15w, Traverse, pump 28 bbls, td 1521 ft.

E. W. Leeder's Russcher 1, ne se nw 11-4n-15w, Traverse, abnd 1595 ft.

Mecosta County—East Fork: L. T. Barber's State 3, sw ne ne 11-16n-7w, Stray sand, 1,200,000 gas, td 1478 ft.

Newaygo County—Woodville: Ohio Oil Co.'s Unit 8, c nw 21-15n-11w, Stray sand, gas, td 1188 ft.

Osceola County—Rose Lake: Sohio's Prosch 1, s½ ne ne 1-18n-10w, Traverse, pump 20 bbls, td 3155 ft.

Osceola County—East Evart: Sun's Davy 2, n½ nw sw 25-18n-8w, Dundee, abnd 3758 ft.

Ottawa County — Walker: Oil Producer's Nichol 1, e½ w½ ne 23-7n-13w, Berea, pump 10 bbls, td 1185 ft.

MICHIGAN WILDCAT

Clinton County — Failure: J. E. Hood's Guernsey 1, ne sw ne 19-8n-4w, Dundee 2861 ft, td 2885 ft.

MONTANA

Toole County—Kevin-Sunburst: Texas Co.'s Kenny 7-A, ne sw ne 15-35n-2w, 500 gals acid pump 18 bbls Ellis-Madison 1545 ft, td 1551 ft.

NEBRASKA

Nemaha County: Dan Short's Paul & Chas. Gauchat 1, c nw nw 23-6n-13e, abnd 1970 ft.

NEW MEXICO

Eddy County: Brewer Dr. Co.'s Etz 1, 503 ft ewl 810 ft snl 30-16s-31e, flow 72 bbls, 2-in, shot 120 qts 3034-90 ft.

Brewer Dr. Co.'s Grier 1, 560 ft ewl 760 ft snl 29-16s-31e, flow 90 bbls, 2-in, shot 120 qts 3170-3230 ft.

Fren Oil Co.'s Friess 4, c ne se 19-17s-31e, flow 140 bbls, 2-in, shot 320 qts 1910-2012 ft, td 2054 ft.

Malco Refineries' State 1-B, ne nw sw 2-18s-27e, pump 80 bbls, 2000 gals acid 395-435 ft, td 2233 ft, pb 435 ft.

Texas Trading Co.'s State 4, c se nw 32-16s-31e, flow 100 bbls, 2-in, shot 130 qts 3240-3330 ft.

Valley Ref. Co.'s Hill 2, nw nw nw 1-18s-27e, abnd 529 ft.

Vickers Pet. Co.'s Etz 1, c se no 30-16s-31e, flow 132 bbls, 2-in, natural, 3105-96 ft.

R. R. Wooley et al's Arnold 4-A, c sw sw 23-17s-30e, flow 300 bbls, 2-in, shot 90 qts 3153-89 ft.

Lea County—Lynn: T. P. Coal & Oil Co.'s State 11-A, c se sw 9-23s-36e, elev 3492 ft, oil-gas blowout, abnd 3592 ft.

Lea County—Maljamar: Williams Oil Co.'s State-Williams 1, c ne ne 31-17s-33e, elev 4028 ft, flow 100 bbls, 2-in, shot 210 qts 4235-4305 ft, td 4328 ft, pb 4305 ft.

NEW MEXICO WILDCAT

Lea County—Failure: Northern Ordnance's Iverson 1, c nw nw 30-18s-33e, elev 3779 ft, anhydrite 1242 ft, salt 1430-2645 ft, abnd in sul w 4810-32 ft.

OKLAHOMA

Bryan County — Cumberland: Pure Oil's Thomas 203, 3, se nw ne¼ 28-5s-7e, Oil Creek 5715 ft, 2nd sand 6366 ft, flow 1728 bbls oil through 1 in tbg choke, 981,000 gas, 6398 ft.

Garfield County—Garber: Sinclair-Prairie's Hoy 27, c s½ ne 25-22n-4w, Upper Hoover 2181-98 ft, shot 40 qts, pump 1 bbl oil & 16 bbls water, td 2312 ft, pb to 2200 ft.

Garvin County—Pauls Valley: Pure Oil's Teter 14, nw se nw¼ 31-4n-1e, Bromide dense 3884 ft, flow 1938.08 bbls oil and 1,425,000 of gas through ¾-in positive tbg choke, 3065 ft.

Greer County—Unnamed: E. J. McLennan's Briggs 1, nw nw nw¼ 31-6n-21w, Granite Wash 768 ft, abnd 775 ft.

Jefferson County—Oscar Pool: W. H. Metzner's Penniston 5, se sw sw¼ 16-7s-5w, sand 765-78 ft, pump 10 bbls oil, 790 ft.

Kay County—Vernon: Kan-O-Tex's Sherbon 2, se ne se 20-29n-1e, Chat 3345 ft, shot 40 qts, pump 5 bbls oil & 12 bbls wtr, 3386 ft.

Noble County—E. Otoe: T. N. Berry et al's Richeman 1, sw nw sw 13-22n-1e, Perry gas sand 2884 ft, flow 113 bbls oil through ¾-in casing choke, 2906 ft.

Noble County—Orlando: Summitt's Randolph 1, se ne sw 11-19n-1w, 2nd Wilcox 4996 ft, no shows, abnd 5011 ft.

Noble County — Unnamed: T. N. Berry's Wood 2, se ne nw 1-20n-2e, Avant 3428 ft, no shows, abnd 3526 ft.

Oklahoma County—W. Edmond: Fox et al's Maker 1, c ne nw 6-13n-4w, Hunton 6952 ft, perf casing 500 gals acid, flow 300 bbls oil through tbg, 7091 ft.

Dickey's Banks 1, c sw se 29-14n-4n, Hunton 6748 ft, perf casing, flow 300 bbls through ¼-in tbg ck, 6900 ft.

Fox-Schmitz's Ringer 2, c nw se 31-14n-4w, Hunton 6876 ft, perf casing, flow 300 bbls oil through ¼-in tbg ck, 7016 ft.

Okfuskee County—N. W. Bearden: Titus Community 1, nw nw sw 31-11n-9e, Wapanucka-Cromwell 3362 ft, 19,800,000 gas, flow 20 bbls oil through tbg, while producing 3,000,000 gas, 3406 ft.

Okfuskee County — N. E. Dill: Midco's Turner 1, ne ne ne 24-12n-8e, Cromwell 3490 ft, shot 20 qts, 400,000 CF gas, pump 77 bbls oil, 3504 ft.

Osage County—Flat Rock: W. A. Davidson's 1, ne nw nw 7-20n-12e, sand 1128 ft, 200,000 gas, td 1540 ft, pb to 1115 ft.

Osage County—Barnsdall: Barnsdall 7, cnl sw nw 11-24n-11e, sand 1675 ft, shot 40 qts, pump 29 bbls oil & 4 bbls wtr, 1729 ft.

Pawnee County — E. Watchorn: Phillips' Robideaux 4, c sw se 26-22n-3e, Misener 3974 ft, 500 gals acid, flow 196 bbls oil & 27 bbls wtr through ½-inch tbg ck, 3993 ft.

Payne County—Ingalls: J. E. Crosbie's Myatt "C" 1, se nw sw 25-19n-4e, Misener 3786 ft, perf casing, flow 426 bbls oil in 4 hrs through tbg, 3832 ft.

Tulsa County—Broken Arrow Dist.: Ab. Ive's Snider 1, sw nw sw 3-18n-14e, Pitkin 1404 ft, no shows, abnd 1406 ft.

OKLAHOMA WELLS DEEPENED

Creek County—N. Bristow Pool: Franchot & Mid-Continent's Timothy 2, nw ne ne 1-16n-8e, Dutcher 3136 ft, no shows, otd 2810 ft, td 3163 ft, abnd.

Okfuskee County—Midwest: Portable et al's Engelman 1, ne nw nw 30-11n-10e, Hunton 3646 ft, perf casing 900 gals acid, no shows, otd 3894 ft, td 3932 ft, pb to 3781 ft, abnd.

Seminole County—River: Sinclair-Prairie's Sunny 8, nw nw nw 14-7n-6e, 2nd Wilcox 4233 ft, pump 140 bbls oil, 25 bbls wtr, otd 4220 ft, td 4249 ft.

OKLAHOMA WILDCATS

Garvin County—Failure: W. L. Wolf's Box 1, se ne ne 34-1n-1w, abnd 970 ft.

Lincoln County—Failure: Wilcox et al's McDaniel 1, nw se sw 3-14n-6e, Viola 4145 ft, abnd 4267 ft.

Seminole County—Discovery: Gulf's Duley 1, se se se 28-10n-7e, shot 30/3429-41 ft, flow 183 bbls, 40-gr, td 3563 ft, pb 3443 ft.

Stephens County—Failures: B. F. Lundy's Kincannon 2, nw sw ne 14-1n-6w, Permian 2190 ft, dry sd 1550-79 ft, brkn dry sd 1600-62 ft, sdy zone dry 2278-2730 ft, sdy sh 2730-2813 ft, abnd 2813 ft.

Gulf's Bobbie Springs 1, c nw nw sw 16-2n-7w, td 10,006 ft, pb and abnd 9340 ft.

WEST TEXAS

Andrews County—Fullerton: Co-Operative Oil Prod. Assn's McKean-Eilers 1, c nw se PSL 14, blk A-32, elev 3332 ft, flow 990 bbls, 3/8-in, 16,000 gals acid 6804-7233 ft.

Andrews County—Masceho: Skelly's University 1-P, 1980 ft nsl 660 ft ewl sec 3, blk 10, flow 273 bbls, 20/64-in, 4500 gals acid 4400-4620 ft.

Cochran County—Slaughter: Continental's Dean 19-58, 651 ft nsl 2348 ft ewl lge 58, Martin CSL, flow 985 bbls, 12,000 gals acid 4560-99 ft.

Devonian et al's Duggan 40-A, 560 ft out ne cor lab 5, lge 55, Oldham CSL, flow 958 bbls, 2½-in, 12,000 gals acid 4980-5020 ft.

Ector County—North Cowden: Texas Co.'s Holt 31, c se ne T&P 11, blk 43, T-1-N, flow 219 bbls, shot 480 qts 4471-4730 ft.

Gaines County—Wasson: Amon G. Carter's Wasson 8-D, 440 ft nsl 1320 ft wel PSL 50, blk AX, flow 883 bbls, 1-in, 7000 gals acid 4910-5040 ft.

Hockley County — Slaughter: Sinclair Prairie's Tyner 1, 440 ft out sw cor lab 5, lge 48, Edwards CSL, flow 191 bbls, ¾-in, 10,000 gals acid 4930-70 ft.

Texas Co.'s Slaughter 148, 580 ft out sw cor lab 81, lge 38, Zavalla CSL, flow 1107 bbls cas, 13,000 gals acid 4945-5015 ft.

Mitchell County—Westbrook: Col-Tex Ref. Co.'s Morrison 4, 330 ft snl 2282 ft ewl T&P 28, blk 28, T-1-N, pump 34 bbls, 13 bbls wtr, shot 900 qts 2946-3100 ft.

Pecos County—Heiner: Culbertson & Irwin-Union Oil Co.'s Heiner 1-A, c nw sw GC&SF 589, blk 105, elev 2560 ft, Ellenburger 5235 ft, abnd 6100 ft.

Winkler County—Hill: Richardson Oil's Hill 2, c ne se PSL 18, blk B-11, elev 2764 ft, flow 100 bbls, ½-in, shot 120 qts 3182-3210 ft.

Winkler County — Keystone: Texas Co.'s Campbell 15, 1874 ft out nw cor PSL 22, blk B-3, flow 229 bbls, shot 180 qts 3245-3333 ft, td 3347 ft.

Yoakum County—Ownby: Geo. P. Livermore-R. M. Kendrick-Malco Refineries' Kendrick 1, 375 ft out nw cor nw sw sec 501, elev 3557 ft, brown lime 4380 ft, San Andres 4750 ft, flow 397 bbls, 7/8-in, 12,000 gals acid 5255-87 ft.

Yoakum County—Wasson: Drilling & Exploration's Davis 1-B, c se sw sec 728, pump 215 bbls, 6.4% bs&w, 10,000 gals acid 4970-5220 ft.

WEST TEXAS OLD WELLS DEEPENED

Pecos County—Taylor-Link: Lee Pet. Corp.'s University 3-D, sw ne ne sec 32, blk 16, otd 1408 ft, pump 30 bbls, 1396-1440 ft.

Ward County: Standard of Texas' Adams 7, 330 ft fr sel 390 ft fr swl H&TC 39, blk 34, otd 2985 ft, abnd 3374 ft.

WEST TEXAS WILDCATS

Andrews County—Failure: Ralph Lowe et al's Lowe 1, c se se PSL 21, blk A-26, elev 3325 ft, anhydrite 1940 ft, Yates sand 3030 ft, grains 3060 ft, lime 4130 ft, San Andres 4620 ft, San Angelo 5950 ft, Clear Fork 6380 ft, abnd 7839 ft.

Reagan County—Failure: Co-Operative Ref. Assn. (was National's) Merchant 1, c nw nw L. & S. V. Rv. 12, blk B, elev 2672 ft, anhydrite 1219 ft, salt 1295 ft, Yates 1995 ft, lime 3248 ft, abnd 3526 ft.

WEST CENTRAL TEXAS

Jones County—Hardy: Great Lakes Carbon Corp.'s Nance 1, 2025 ft nsl 552 ft ewl, A. C. Mitchell sur, elev 1608 ft, Gunsight 2813 ft, abnd 3750 ft.

Jones County—Wimberly: Ernest L. Wilson et al's Mashburn 6, 420 ft snl 150 ft wel blk 85, DeWitt CSL, dual producer, flow 1088 bbls, ¾-in, natural, upper sand 2147-82 ft; flow 644 bbls, ¼-in, 5000 gals acid, 2217-37 ft, td 2370 ft.

Stephens County: W. J. Rhodes et al's Rollins 9, se¼ T&P 54, blk 5, pump 16 bbls, 1807-20 ft.

E. H. R. Sabens et al's Hinson 1, 330 ft out se cor 33-ac tr in mid-part S. P. Ry. 446, pump 8 bbls, 1752-61 ft, td 1875 ft, pb 1765 ft.

WEST CENTRAL TEXAS WILDCATS

Coleman County—Failure: Ungren-Frazier et al's Cox 1, 357 ft snl 332 ft wel se HT&B Ry. 25, elev 1671 ft, abnd 1822 ft.

Jones County—Failure: Hickok P & D Co.-Harry Reynolds-Joe Gallagher's Manley 1-A, ne ne sw T&P 35, blk 14, elev 1666 ft, abnd 1773 ft.

SOUTHWEST TEXAS

Duval County Cedro Hill: Magnolia's Duval County Rch 14, 1650 ft fr nwl 2310 ft fr swl 320-ac lse GC&SF sur 132, perf 1460-63 ft, flow 27 bbls day, td 1464 ft.

Duval County—Conoco-Driscoll: Continental's Driscoll 85-A, 8750 ft e fr wl 12,000-ac lse, John P. Nelson sur 448, 6-in 3596 ft, perf 3433-43 ft, 3496-3514 ft, flow 50 bbls, 3/16-in, td 3596 ft.

SOUTHWEST TEXAS WILDCATS

Duval County—Failure: Continental's Welder 1, San Ignacio area, 330 ft fr nl 1320 ft fr wl, J. Poltevent sur 211, 2 mi se Seven Sisters field, abnd 3235 ft.

Jim Hogg County—Discovery: Texas Co.'s Yaeger 3, 1000 ft fr nl 2500 ft fr el, R. Garza sur 222, 9000 ft nw Armstrong field, 5½-in 2930 ft, perf 2878-81 ft, flow 6,400,000 gas open, td 3468 ft.

SOUTH CENTRAL TEXAS

Atascosa County—Imogene: Humble's Richter 1, ctr lot 188, blk 27, Rogue Mauricio sur, 5½-in 7618 ft, acidized, flow 157 bbls, 3/16-in, td 7622 ft.

Frio County—Pearsall: Highland Oil Co.'s Halff & Oppenheimer 6, 2309 ft se fr sel Clare sur 467 ft ne fr nel Couch sur, 1242-ac lse in J. H. Gibson sur, 5½-in 3914 ft, perf 3907-14 ft, flow 145 bbls, 3/16-in, td 3914 ft.

Guadalupe County—Day: A. J. Hollyfield's Webb 1, 101-ac lse, Benjamin Fugua sur, abnd 2824 ft.

SOUTH CENTRAL TEXAS WILDCAT

Gonzales County—Failure South Basin Oil Co.'s Duderstadt 1, 374-ac lse, John L. Wood sur, abnd 5260 ft.

LOWER TEXAS COAST

Brooks County—Palo Blanco: Alfred Morrison's Hooker 1, 1270 ft fr sw'ly swl 467 ft fr se'ly nwl 325-ac tr sec 69, Las Megueyes de Palo Blanco Gr, abnd 3100 ft.

Goliad County—Slick-Wilcox: Continental's Allen 1, 330 ft fr nw&swl 508-ac lse, W. C. Brown sur & Obed Marshall sur, 7-in 7624 ft, perf 7589-94 ft, 261 bbls, 5/32-in, td 7624 ft.

Forest Development Corp.'s Poetter 1, 430 ft fr sel 330 ft fr swl 80-ac lse, W. C. Brown sur, 7-in 7630 ft, perf 7608-11 ft, 7619-24 ft, 255 bbls, 5/32-in, td 7630 ft.

Hidalgo County—Penitas: Arkansas Fuel's Well 1, 6822 ft s alg el 1002-ac lse fr its ne cor, 1500 ft fr el, Joaquin Y. Ponce porc 47, abnd 5210 ft.

Jackson County—West Ranch: Humble's Toney 16, 1609 ft nw'ly alg nel 385-ac lse fr e cor at w bank Lavaca river, th 2030 ft sw'ly at ra in, R. Musquez Gr, 5½-in 5743 ft, flow 170 bbls, ¼-in, td 5748 ft.

Jim Wells County—North Magnolia City: Magnolia's Baker & Cohn 1, 660 ft fr n&el blk 4, Adams-Staples Fm Lots, 241-ac lse, Jose Pacheco Gr, abnd 5856 ft.

J. B. Stoddard's Cohn 1, 80-ac lse, Magnolia Fig & Orange Colony subdvn, Jose Pacheco Gr, 5½-in 5245 ft, perf, abnd 5510 ft.

Jim Wells County—Seeligson: Sun's Canales 25, 990 ft fr el, 2280 ft fr sl 3300 ft fr wl 4465 ft fr nl, J. E. Stevens sur, 3000-ac lse, 5½-in 6070 ft, perf 6013-20 ft, flow 162 bbls, ¼-in, td 6125 ft.

Nueces County — Stratton: Lonnie Glasscock's Imken 1, 467 ft fr s&wl sec 167, Bishop subdvn, Palo Alto Gr, 320-ac lse, 7-in 7028 ft, dual comp, perf 6559-64 ft, 91 bbls, 9/64-in; perf 6625-30 ft, 120 bbls, ⅛-in, td 7293 ft.

Tom Graham's Browning 2-A, 467 ft fr n&wl 120-ac lse, frac nw¼ sec 166, Paso Ancho de Abajo Gr, 5½-in 6668 ft, dual comp, perf 6549-60 ft, 111 bbls, 5/32-in; perf 6612-20 ft, 184 bbls, 5/32-in, td 6668 ft.

Texon Royalty Co.'s Elliff 10, 467 ft fr wl 2353 ft fr sl 3054-ac tr, Antonio Longoria Los Sauces Gr, 7-in 5831 ft, perf 5827-30 ft, flow 35 bbls, ¼-in, td 5831 ft.

San Patricio County—North Odem: Texas Conservative Oil Co.'s Gaines 1-B, 660 ft fr nw&swl blk 17, Welder & Odem subdvn, CEPI&M sur, abnd 5562 ft.

San Patricio County—Plymouth: Plymouth Oil Co.'s Welder 127-C, 2075 ft fr wl 2056 ft fr sl sec 45, Welder Rch, Francis Mudd sur, 5½-in 5900 ft, blew out, cratered, abnd 5900 ft.

Victoria County—East Placedo: W. L. Goldston's Mo. Pac. RR Co. 2, 3100 ft ne of swl, E. Benavides Gr, 5½-in 6434 ft, dual comp, perf 6015-20 ft, 66 bbls, 3/32-in; perf 6378-81 ft, 79 bbls, 3/32-in, td 6889 ft.

LOWER TEXAS COAST WILDCATS

Bee County—Discovery: H. B. Zachry Co.'s Campbell 1, 3 mi e Mineral twnste, 1550 ft fr sl 2100 ft fr el, Brooks & Burleson sur 1, 895-ac lse, 5½-in 7787 ft, perf 7181-95 ft, flow 42 bbls, 3/16-in, 14,000,000 gas open, td 7787 ft, opens Wilcox sand field.

Brooks County—Failure: Standard of Texas' Chavana 1, 2333 ft fr el 467 ft wl 400-ac lse, La Encantada Gr, 3½ mi se Alta Mesa, abnd 7361 ft.

Live Oak County—Discovery: Continental Oil's Somerset Land & Cattle 1, 330 ft fr nwl 3075 ft fr nel TTRR sur 319, 8887-ac lse, 7-in 8144 ft, open hole 8144-93 ft, flow 64 bbls, ¼-in, 1,600,000 gas, td 8144 ft.

San Patricio County—Failure: Continental's McNeil 1, 160-ac lse, se¼ sec 31, 6 mi se Sinton, abnd 7025 ft.

LOWER TEXAS COAST EXTENSIONS

Jackson County—West Ranch: Seaport Oil Co.'s Bennett 1, 467 ft fr ne&nwl 79-ac lse, blk 30, 1st subdvn J. M. Bennett Rch, 696-ac lse, R. Musquez Gr, 5½-in 5657 ft, dual comp, perf 5580-84 ft, flow gas-cond, no gge; perf 5063-67 ft, flow 47 bbls, 7/64-in, td 5785 ft. Extends prodn 1 mi nw.

Nueces County—Agua Dulce: Simmonds & Perry's Fee 2-B, 3107 ft fr nl 520 ft fr wl sec 2, Simmonds & Perry subdvn Puenticitas Gr, 5600-ac lse, 5½-in 7406 ft, perf 7332-35 ft, 128 bbls, ¼-in, td 7406 ft. Extends prodn 2945 ft se.

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UNITED STATES WELL COMPLETIONS

TEXAS GULF COAST

Brazoria County—Rowan: Rowan Drilling Co.'s Bradbury 1-B, 435 ft se at ra fr nwl of 40-ac unit & of sec 4, Hooper & Wade sur, 5½-in 8551 ft, perf 8530-50 ft, 124 bbls, ⅛-in, td 8551 ft.

Fort Bend County—Thompson: Cecil V. Hagen's Wolters 1, 100-ac tr, Samuel Kennedy sur, 680 ft fr sl 466 ft fr el of lse, blk 8, 5½-in 5426 ft, perf 5390-5408 ft, 437 bbls, ¼-in, td 5426 ft.

Fort Bend County—Clodine: Providence Oil Co.'s Dorrance & Wing 1, 1430 ft fr wl 467 ft fr nl 120-ac lse, John Fredericks sur, 5½-in 7501 ft, perf 7498-99 ft, 102 bbls, 7/64-in, td 7501 ft.

Harris County—Dyersdale: Frank J. Gravis' Burkitt 33, ctr e&wl & 572 ft fr nl 40-ac tr, 689-ac lse, J. Bundick sur, 5½-in 4070 ft, perf 4060-70 ft, 102 bbls, ¼-in, td 4070 ft.

Jefferson County—Stowell: Crown Central's Powell 1, 330 ft fr sl 660 ft fr el lot 8, Koch subdvn, 5½-in 9089 ft, perf 8830-38 ft, 111 bbls, ¾-in, td 9096 ft.

Matagorda County—North Bay City: Sun's State-Colorado River 1, 573 ft se of nwl Sun's 500-ac McDonald lse, 5½-in 8787 ft, perf 7900-03 ft, 377 bbls, 12/64-in, td 8903 ft.

Liberty County—Hull: John W. Mecom's Abel Heirs 1, 20-ac lse, 650 ft fr wl & 330 ft fr nl, old Crown Central lse, 5½-in 2411 ft, sand 2333-68 ft, pump 75 bbls, td 2406 ft.

TEXAS GULF COAST WILDCATS

Fort Bend County—Failure: H. M. Naylor Oil Co.'s Randle 2, 547-ac lse, Jane H. Long sur, 1½ mi e Richmond, abnd 9183 ft.

Wharton County—Failure: J. B. Ferguson & Stewart Boyle's Kubela 1, 190-ac lse, H&TC sur 5, 6 mi w Pierce, abnd 5012 ft.

EAST TEXAS

Wood County — Quitman: Amerada-Gulf's White 1-A, 849 ft nsl 1260 ft wel, S. G. Purse sur, Woodbine 4403 ft, Georgetown 5065 ft, Paluxy series 6303 ft, flow 331 bbls, ¼-in, perf 6311-44 ft, td 6354 ft.

Shell's Goldsmith 8, 1510 ft snl 2580 ft ewl, W. W. Lanier sur, Paluxy series 6311 ft, flow 503 bbls, ¼-in, sand 6320-57 ft.

EAST TEXAS WELL DEEPENED FOR WATER DISPOSAL

East Texas Field — Joiner Area: Sinclair Prairie's Jarvis 23-C, 256.06-ac lse, de los Coy sur, Smith County, otd 3673 ft, dd wtr sand 3825 ft.

EAST TEXAS WILDCATS

Bowie County—Failure: Barnsdall's Heilborn 1, 550 ft nsl 7500 ft wel, M. H. Jones sur, elev 285 ft, Annona 1720-1990 ft, Woodbine 2760 ft, Georgetown 2930 ft, Goodland 2950 ft, Paluxy 3090-3400 ft, Massive anhydrite 4500-4570 ft, anhydrite stringer 4684 ft, James 5035 ft, Pettit 5230 ft, Travis Peak 5325 ft, Cotton Valley 6215 ft, Buckner 4725 ft, Smackover 7690 ft, abnd 7836 ft.

Hopkins County—Failure: R. B. Campbell and A. G. Hill's Warren 1, 1980 ft ewl 660 ft nsl 102-ac tr, J. C. Sanders sur, 3½ mi se Cumby, elev 572 ft, Pecan 1820 ft, Austin 3470 ft, Woodbine 4045 ft, Georgetown 4795 ft, Goodland 5730 ft, Paluxy (water) 5850 ft, abnd 5991 ft.

Morris County—Failure: Humble's Wright 1, 660 ft ewl 1980 ft nsl 81-ac lse, Samuel Story sur, elev 338 ft, Woodbine 3939 ft, Georgetown 4204 ft, Goodland 5126 ft, Paluxy 5202 ft, massive 6694-6866 ft, Travis Peak 7526 ft, Cotton Valley 8969 ft, Buckner 10,285 ft, Smackover 11,488 ft, abnd 11,814 ft.

Van Zandt County—Failure: Delta Dr. Co. et al's Gipson-Echols 1, 467 ft fr m/s/n and m/e/e lines, J. Walker sur A-902, elev 432 ft, Pecan 2370-2490 ft, Austin 3620-3985 ft, Woodbine 4498 ft, Georgetown 5264 ft, Buda 5302 ft, Ft. Worth 5925 ft, Goodland 6402 ft, Paluxy 6461 ft, massive 7910-8092 ft, Pettit 8750 ft, Travis Peak 8832 ft, abnd 9012 ft.

EAST TEXAS BORDER

Cass County—Kildare: Phillips' Latham 1, B. W. Hopson sur, flow 125 bbls, 5/16-in, perf 6020-36 ft.

NORTH TEXAS

Archer County—Little Wichita: Deep Oil Dev. Co.'s Wilson 28, 1320 ft snl 330 ft ewl ATNCL sec 118, flow 1793 bbls, 2-in, 750 gals acid, Bend perf 4862-72 ft, td 4955 ft.

Phillips' Wilson-Barclay 1-a, 690 ft nsl 2068 ft wel, w-1280-ac, Wm. Walker sur, Bend 4882 ft, flow 635 bbls, ⅝-in, natural, perf 4882-92 ft, td 4960 ft.

Archer County: J. A. McCarty-J. P. Coleman's Taylor 5-A, 380 ft snl 310 ft wel lot 13, ATNCL sec 17, pump 106 bbls, sand 1481-89 ft.

Rathke Oil Co.'s L. Echols 1, 300 ft snl 1000 ft ewl sec 12, South Anderson Ranch sur, abnd 1441 ft.

Staley Oil Co.'s Powell 1, 200 ft n 200 ft e of nw cor sec 30, blk 5, Clark-Plumb sur, in J. M. Armstrong sur A-763, abnd 939 ft.

Clay County: Texas Co.'s Saner 8, 369 ft fr sel lot 6, 1750 ft fr nel lot 8, but in lot 6, Saner-Lomax sur, pump 47 bbls 1080-89 ft.

New York City-Shell's Cullers 1, 1600 ft n 1900 ft e of sw cor W. H. Cullers sur A-814, elev 898 ft, Bend 5860 ft, Mississippi 6426 ft, Viola 6470 ft, Simpson 6488 ft, dolomite 6608 ft, jkd and abnd in Simpson at 6778 ft.

Cooke County: Bridwell Oil Co.'s Campbell 6, 2500 ft snl 4850 ft wel, O. F. Leverett sur A-607, abnd 1050 ft.

Kewanee Oil Co.'s Hyman-Sun 10-A, 450 ft snl 722 ft ewl of 208-ac tr, J. T. Moss sur A-736, pump 10 bbls, shot 20 qts 1173-1200 ft, td 1358 ft, pb 1250 ft.

Texas Co.'s Trubenbach 34, 3600 ft nsl 3400 ft ewl, J. Clark sur A-194, pump 16 bbls, shot 5 qts 560-70 ft, td 791 ft, pb 775 ft.

Cooke County—Walnut Bend: Carter-Gragg Oil Co.'s Green 1, 330 ft snl 407 ft ewl sec 79, Fannin CSL, top Winger 5573 ft, flow 682 bbls 2-in, 5584-89 ft.

Haskell County—Strand: J. C. Hunter et al's Strand 2-A, 783 ft snl 678 ft ewl ne H&TC Ry. 5, blk 5, elev 1507 ft, top Palo Pinto 3395 ft, abnd 3401 ft.

Jack County — McDonald: Champlin Ref. Co.'s Tibbs 2, 1520 ft nsl 1030 ft wel sec 6, Wm. McDonald sur, flow 892 bbls, ½-in, natural, Strawn 3463-69 ft.

Montague County — Hildreth: Continental's Middleton 1, nw nw ne E. T. Ry. 55, Bend 6130 ft, flow 729 bbls, ½-in, natural, cong perf 6192-6218 ft, td 6487 ft.

Montague County — Illinois Bend: R. C. Lipscomb et al's Fatheree 1, 330 ft out m/n/nw cor, A. C. McCain sur A-1350, pump 70 bbls 30-gr, 20 bbls wtr, Strawn 3483-3520 ft, td 4461 ft, pb 3520 ft.

Montague County — Mueller: Continental's Kaiser 1, 1026 ft fr swl 1043 ft fr nwl Hill CSL sec 96, top Bend 6080 ft, flow 860 bbls ½-in, natural, lime perf 6082-6100 ft, td 6192 ft.

Wichita County: Geo. Graham et al's Cooper 1, 75 ft nsl 1615 ft wel, Henry Hastie sur A-492, abnd 1328 ft.

Magnolia's Schmoker 47, 1019 ft wel 959 ft nsl sec 24, Red River V. F. L. sur, pump 3 bbls, 1732-40 ft, td 1747 ft.

Kemrow Co.'s Burnett 59-A, 620 ft snl 610 ft wel of n-60 ac of w-160 ac of s½ HT&B sec 6, pump 4 bbls, shot 5 qts 955-70 ft.

Wichita County — K-M-A Ellenburger: Blackwell O&G Co.'s Hodges 11-E, 370 ft nsl 330 ft wel w-162-ac of 196-ac tr, W. H. Spillers sur, KMA 3630 ft, Miss 4144 ft, Ellenburger 4183 ft, flow 830 bbls, ¾-in, natural, 4185-4218 ft.

Perry Browning et al's Lewis 1-E, 990 ft out ne cor blk 20, KWVFL, Ellenburger 4206 ft, flow 975 bbls, ¾-in, natural, 4206-14 ft.

Wilbarger County: H. W. Roberts et al's Waggoner-Smith 7, 150 ft wel 1800 ft nsl H&TC 40, blk 4, pump 6 bbls, 1215-16 ft.

Consolidated-W. T. Waggoner Est.'s Fee 11-GG, 2600 ft nsl 1300 ft wel H&TC 36, blk 6, top KMA 3870 ft, pump 75 bbls, 1000 gals acid, 3947-63 ft.

Young County: Dorian & Mitchell's Daniels 3, 330 ft out nw cor TE&L sec 420, elev 1192 ft, Bend 4078 ft, Marble Falls 4427 ft, abnd 4473 ft.

NORTH TEXAS OLD WELL DEEPENED

Wilbarger County: W. T. Waggoner's Fee 1-I, 205 ft out se cor of w-213 ac H&TC 33, blk 4, otd 2397 ft, abnd 2682 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: Frank Wood et al's Abercrombie 1-A, 1200 ft nsl 200 ft wel, W. A. Rucker sur A-1110, abnd 1500 ft.

W. H. Peckham et al's Tarr-Taylor 1, 2539 ft snl 1087 ft wel sec 136, J. W. Harris subdiv, abnd 1378 ft.

Jack County — Failures: Hanlon & Buchanan's Johnson 1-E, 495 ft s 200 ft e of se cor, C. Vandiver sur, but in Wm. Thompson sur A-608, Bend 4675 ft, Marble Falls 5170 ft, Mississippi 5378 ft, Barnett 5623 ft, Ellenburger 5838 ft, abnd 5995 ft.

D. L. Johnson and Olsan Bros.'s Crum 1, 2157 ft nsl 2640 ft ewl, N. P. Overby sur A-452, abnd 3310 ft.

Young County — Failures: Anderson-Prichard's Cloud 1, 660 ft out se cor, T. Anthoney sur A-1716, Palo Pinto 1750 ft, Bend 3636 ft, abnd 3811 ft.

Valley Osage Oil Co.'s Leberman 1, 200 ft snl 1666 ft wel TE&L sec 154, abnd 1024 ft.

TEXAS PANHANDLE

Gray County: Plains Dr. Co.'s Chapman 3-C, se se nw H&GN 50, blk A-9, pump 47 bbls, shot 175 qts 2711-77 ft, td 2786 ft.

Skelly's Taylor 13, 1500 ft nsl 1190 ft wel sw¼ H&GN 7, blk B-2, pump 171 bbls, shot 293 qts 2940-3000 ft.

Texas Co.'s W. Benedict 10, H&GN 55, blk B-2, pump 264 bbls, shot 760 qts 2960-3070 ft, td 3075 ft.

WYOMING

Park County—Oregon Basin: Ohio Oil Co.'s Cactus 2-B, ne sw ne 6-51n-100w, top Embar 3380 ft, top Tensleep 3528 ft, pump 250 bbls Embar 3404-40 ft, 5½-in 3540 ft, td 3582 ft.

United States Wildcat Starts

ARIZONA

Navajo County: Continental-Union Oil Co. of Calif.'s Santa Fe Ry 1, 34-15n-19e, rur.

ARKANSAS

Hempstead County: M. E. Davis' Harry Ezzel 1, se se ne 2-13-27, to be dr 4500 ft.
Nevada County: De Kalb Agr. Assn.'s Bass-Bemis 1, c ne ne 35-14s-21w, lcn.
Union County: B. W. Murphy & J. T. Head's J. T. Murphy 1, cor se sw se 8-16-15, Smackover lime test, lcn.
White County: Killam and Macmillan's J. C. Curl 1, c ne sw 10-9-5, to be dr 6000 ft.
Yell County: Lion Oil's McClure 1, c sw se 19-7n-21w, lcn.

CALIFORNIA

Fresno County: Standard's 88-3, se se se 3-17-14, Cantua Creek area, lcn.
Kern County: General Petroleum's Railroad 4, se se ne 23-28-28, Round Mt. area, lcn.
Independent Exploration Co.'s Austin 1, ne ne nw 28-28-27, Kern Front area, lcn.
Shell's Afana 1, nw nw nw 18-29-29, Ant Hills area, lcn.
Los Angeles County: O. F. Darling's Carson 1, 960 ft e on s/l Carson Estate fr c/l Alameda th 300 ft sly at r/a, Dominguez area, mim.

ILLINOIS

Edwards County: Geo. C. Schoonmaker's J. T. Cowling et al 1, sw sw se 16-2s-14w, lcn.
Greene County: F. A. Johnson's J. L. Waller 1, sw nw ne 12-11n-10w, lcn.
Lawrence County: Clark C. Nye's Crane 1, nw nw nw 33-3n-12w, lcn.
Marion County: Absher & Booth's L. J. Jones 1, nw ne se 10-3n-2e, dr.
Montgomery County: Geo. Cassens' C. W. Keune 1, ne nw nw 32-8n-5w, lcn.
Richland County: Mohawk Drlg. et al's R. P. McNair 1, sw sw sw 33-3n-14w, lcn.
Washington County: Harry H. Hubbard's Sandheinrich 1, sw sw sw 18-2s-5w, lcn.

KANSAS

Doniphan County: Clifton Gall et al's Cudle 1, nwc se 18-3s-20e, lcn.
Ellis County: N. Appleman's Von Lintel 1, nwc 4-14s-16w, lcn.
Darby, Continental-Cities Service's Kansas Frontier State Park 1, nwc se 5-14s-18w, lcn.
Ellsworth County: Phillips' Urbanek 1, sw sw se 7-15s-8w, lcn.
Phillips' Klema 1, nw nw ne 5-14s-10w, lcn.
Cities Service's Campbell 1, nec sw 12-17s-8w, lcn.
Hodgeman County: Continental's L. C. Koontz 1, swc 30-24s-4w, dr 600 ft.
Marion County: Sohio's Voth 1, swc se, 9-21s-1e, lcn.
Phillips County: N. Appleman's Steel 1, swc se 3-5s-15e, lcn.
Sheridan County: Continental's C. A. Croffoot 1, swc se 35-7s-26w, td 3925 ft, mist.
Trego County: Lion & Auto Ordnance's Walsh 1, nec sw 5-11s-25w, dk.

KENTUCKY

Butler County: Perry Fulk's Moore & Helsey 1, 2-H-32, dr.
Muhlenberg County: Carter's W. N. Vaught 1, 20-J-31, lcn.
Hopkins County: Kingwood's W. L. Coffman 1, 11-K-26, lcn.

NORTH LOUISIANA

Moorehouse Parish: Roeser and Pendleton Inc.'s Taylor 1, sw sw 1-21n-7e, lcn.

SOUTH LOUISIANA

Jefferson Parish: California Co.'s LeBlanc 1, begin nw cor unit 43, go no 60° 23 mins e 648 ft, th s 31° 54 mins e 672 ft, 1-16s-23e, lcn.

MICHIGAN

Allegan County: J. J. McGerry's Haveman 1, se nw ne 30-2n-11w, rig.
Antrim County: Sohio's Jordan 1, s½ ne nw 9-31n-7w, lcn.
Newaygo County: C. D. Hoffman's Consumers 1, s½ se ne 28-11n-14w, rig.
Roscommon County: E. V. Hilliard's State C1, s½ ne ne 13-21n-4w, rig.

NEW MEXICO

Eddy County: Martin Yates Jr. et al's Wright 1, nw sw se 29-18s-29e, dr 360 ft.

OKLAHOMA

Coal County: Pure's Edwards 1, se ne nw 28-2n-9e, mit.
Garvin County: Pure's Brimley 1, nw ne nw 1-3b-1w, dr 160 ft.
Kay County: J. E. Crosbie's Kay-State 1-A, ne sw sw 16-29n-3e, lcn.
Lincoln County: Northern Ordnance's Johnston 1, sw nw nw 6-14n-5e, woc.

WEST TEXAS

Coke County: Tom Ragsdale et al's Eddie Adams 1, 330 ft nsl 660 ft ewl 165-ac lse, Geo. Allen sur No. 2, lcn 4000-ft test.
Crane County: I. T. Dennis-Jas. Fitz-Gerald Jr.-Eastland Oil Co.'s O. B. McPherson 1, c n¼ of n¼ H&TC 16, blk 35, mim for Ellenburger test.
Loving County: Standard of Texas's W. D. Johnson 1-10, c ne ne T&P Ry. 10, blk 56, Tsp. 1, lcn Delaware test.
Standard of Texas' Johnson 1-26, c se se T&P Ry. 26, blk 54, Tsp. 2, mim in for Delaware test.
Standard of Texas' Johnson 1-46, c ne ne T&P Ry. 46, blk 54, Tsp. 1, lcn Delaware test.
Pecos County: Phillips' Iowa Realty Trust 1, 660 ft fr nwl 990 ft fr nel H&GN 139, blk 10, lcn Ellenburger test.
Standard of Texas' Mac-Der Co. 1, Lse 5, c ne sw T & St. L. Ry. 4, blk 228, lcn for Ellenburger test.
Reagan County: Standard of Texas' University 1-24, c sw ne sec 24, blk 58, 5 mi n by e Big Lake field, lcn.

WEST CENTRAL TEXAS

Callahan County: L. H. Choate et al's R. D. Williams 1, 720 ft nsl 960 ft wel sw se, Bayland Orphan Asylum Lands, sec 61, lcn 600-ft test.
T. S. Stanfield et al's J. A. Heyser 1, 3150 ft snl 1470 ft wel w½ Bayland Orphan Asylum Lands sec 20, lcn 600-ft test.
Eastland County: C. D. Lane et al's R. W. Edwards 1, 1500 ft nsl 467 ft ewl se E. T. Ry. 34, blk 2, lcn 3000-ft test.
Jones County: W. D. Brookover et al's E. L. Kelso 1, 1403 ft nsl 400 ft ewl sec 101, Godwin subdvn of DeWitt CSL lge 126, lcn 2700-ft test.
Bell Oils' Beaty-Akin 1, 330 ft nsl 440 ft wel sec 44, D&DA sur, lcn.
Jones-Stasney et al's Stenholm 1, c ne se BBB&C Ry sec 188, lcn 3300-ft test.
Shackelford County: Shell's Leschber 1, 330

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ft snl 990 ft wel sw sec 34, Blind Asylum Lands, lcn 4750-ft Ellenburger test.

Taylor County: Northern Ordnance's Allie Toombs 1, nw nw se S. P. Ry. 12, blk 9, lcn 2900-ft test.

SOUTHWEST TEXAS

Duval County: Argo Oil Corp's Canales 1, 433-ac lse, share 38, Jose Marcelino Hinojosa Gr, lcn 5500-ft test.

Taylor Refining Co.'s Sepulveda 2-B, 330 ft fr s&wl, R. Sepulveda sur 15, 1½ mi n Cadena field, lcn 5000-ft test.

Starr County: Continental's Cameron 1, North Rincon area, 293-ac lse, CCSD&RGNG sur 512, lcn 5000-ft test.

LOWER TEXAS COAST

Bee County: H. F. Wilcox Oil & Gas Burrows 1, 160-ac lse, James Jones sur, 9 mi w Beeville, lcn 5000-ft Pettus test.

Hidalgo County: Baldridge & King & Nichols & Sohio Petroleum's King 1, 720-ac lse, in sw corner Los Indios Pasture Tract 9, San Salvador del Tule gr, 4 mi nw Linn, lcn 9000-ft test.

Live Oak County: Freeman Galt's Brookshire 1, nw¼ HT&B sur 1, near Clegg, lcn 3000-ft test.

SOUTH CENTRAL TEXAS

Bexar County: C. D. Reinhardt's Fee 1, 7900 ft fr el 1688 ft fr nl, William Small sur 26, 5 mi s San Antonio, orig started as water well, blew out 1100 ft, flow around 1500 gas, set casing 1424 ft, testing.

Dimmitt County: Robert Wheeler's Potchernick 1, 1½ mi ne Valley Wells, 648-ac tr, Good Luck Colony sur, I&GN sur, lcn 5500-ft test.

Guadalupe County: W. H. Schafer's Weber 1, 207-ac tr, Guadalupe Torres sur, 5 mi sw Marion, lcn 1500-ft test.

Wilson County: J. A. Caldwell's Pierdella 1, Lavernia area, 100-ac lse, J. F. Herrera Lge, lcn 1100-ft test.

TEXAS PANHANDLE

Potter County: Canadian River Gas Co.'s Lee Bivins 30-A, c se nw AB&M 192, blk 2, 4 mi nw Amarillo, lcn.

TEXAS GULF COAST

Fort Bend County: British-American's Hurta 1, 50-ac lse, Robert Hodge sur, 3 mi s Needville, lcn 6000-ft test.

Jefferson County: Glenn H. McCarthy's Lehmann 1, 640-ac lse, T&NO sur, sec 71, 6 mi nw Hamshire, lcn 10,000-ft test.

Trinity County: Continental's Houston County Timber 1, 2500-ac lse, A. Henry sur & John Appleman sur, lcn 4800-ft test.

EAST TEXAS

Camp County: Mid-Continent's L. W. McGahee 1, 660 ft out nw cor 61½-ac pooled lse, or 2000 ft wel 4800 ft nsl, Harrison CSL sur No. 2, A-54, mim for Travis Peak test.

Rusk County: Sinclair Prairie's F. H. Markey 1, 2231 ft snl 1300 ft wel, Robt. Merritt sur, 6 mi w by s Tatum, lcn Travis Peak test.

Wood County: Sohio's Little Sandy Club 1, 500 ft nsl 1000 ft ewl T. R. and Jas. Hamblin sur, 2¼ mi se Crow, mim for Paluxy test.

EAST TEXAS BORDER

Nacogdoches County: J. F. Lytle's J. R. Summers 1, J. Reed sur, 5 mi e of Nacogdoches, projected 9000 ft to Travis Peak, lcn.

Panola County: W. C. Feazel and Norman Kinsey's Ross 1, A. Morman sur, 2 mi sw of Jornan 1, deep gas discovery west of Carthage, lcn.

NORTH TEXAS

Archer County: W. H. Peckham et al's L. H. Tarr-Taylor 1, 2539 ft snl 1087 ft wel sec 136, J. W. Harris subdiv, sd 1378 ft.

Chas. H. Featherstone et al's L. Kinder 1-112, 1496 ft wel 300 ft nsl sec 112, blk 4, Clark-Plumb sur, lcn 1250-ft test.

Martin Properties' John Purcell 1, 600 ft snl 200 ft wel of 63¼-ac tr, Jose Ostane sur A-333, lcn 1200-ft test.

Montague County: Continental's J. M. Handley 1, 3600 ft fr sel 3500 ft fr swl D, Martindale sur A-465, Mallard prospect, lcn 7600-ft Ellenburger test.

Tom F. Hunter et al's H. H. Durham 1, 660 ft out sw cor of 181-ac tr, Francisco Escobar sur A-216, lcn 4500-ft test.

Squeaks from the Bull Wheel

Out of the Mouths of Linotypes

"Sir!" stormed the parson, stamping into the editor's sanctum, "your compositors are grossly incompetent!"

"Indeed," returned the editor, mildly. "What have they done?"

"Why," came the reply, "in your report on my sermon, the word 'reverend' occurs 14 times, and each time they have misprinted it 'neverend.'"

Just That

"Pa, what does it mean here by 'diplomatic phraseology'?"

"My son, if you tell a girl that time stands still while you gaze into her eyes, that's diplomacy. But if you tell her that her face would stop a clock, you're being just a little bit undiplomatic."

About Shot

And what did the man at the garage say was wrong with your tires?

He said the air was beginning to show through.

Diplomatic Approach

Say, Ted, how about our having dinner together tonight?

I'd love it.

O.K. pal, tell your wife I'll be over about seven o'clock.

No Change

Feel any change after your trip?

No, chum, not a penny.

A Poser

Jones, everyone is out of step but you.

You're in charge, Sarge, what shall I do?

Seeking Security

I suppose you want a commission.

No, thanks. I'm such a poor shot, I'd rather work on a straight salary.

First Evidence

"Last night, your daughter accepted my proposal of marriage. Fully realizing the importance of the step, I have called to see you and to inquire if there is any insanity in your family?"

The old professor looked up over his glasses and surveyed the young man in silence for a moment, then sadly nodding his head, remarked, "Yes, yes. There must be."

Gotkool
WATER CANS
& COOLERS
Gott
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
GOTKOOL WATER COOLER
Made in 2, 3, 5, 8, 10, 15 and 20 gallon sizes.
KEEP PURE DRINKING WATER ALWAYS HANDY

They practice what they preach

Here in the oil fields, operators talk and produce in terms of thousands of barrels. But when it comes to consumption of these vital stores of petroleum—then these same men are just like any "A" book holder down to his last coupon.

This vigilance against waste is not just a war expediency. It began long before the hooked cross spread its tentacles over the world . . . and its beginning was marked by the introduction of Cummins Diesel Power in the oil fields because it was found to be "Faster and Cheaper than Steam."

Today, in every major producing area, Cummins Dependable Diesels are in the forefront of the petroleum industry's fight to achieve maximum production with maximum economy . . . not only economy in the consumption of fuels and lubricants, but also economy of time, materials and manpower.

Here, truly, is a demonstration of conservation . . . here is an example of men in industry who *practice what they preach!* CUMMINS ENGINE COMPANY, Columbus, Indiana.

This is the fourth in a series of advertisements depicting the war-time role of Cummins Diesel Power in the nation's basic industries. If you are operating Cummins Dependable Diesels, you can assure their most effective use by making doubly sure that they are maintained and serviced—regularly and efficiently. Ask your Cummins Dealer for details.

Notes for the Equipment Buyer and User

Depthometer

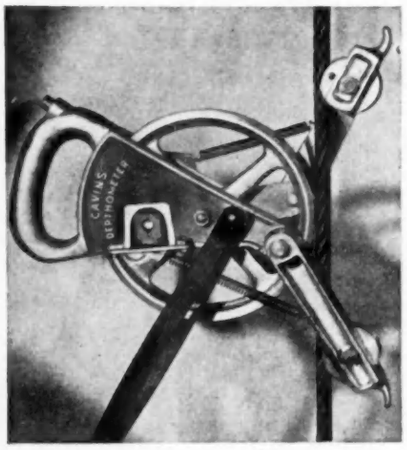
THE CAVINS COMPANY

The Cavins Company, 2835 Cherry Avenue, Long Beach, California, has developed a depthometer designed to measure quickly and accurately the depth of oil and gas wells on both rotary and cable tool rigs.

Measurements can be taken in very little more time than is required to run to bottom with a bailer, or other tool.

The depthometer utilizes the "friction" principle, but the method of application is different from that of other mechanical devices. The main wheel is held tightly against the line by tension arms, and this uniform positive rotation of the wheel practically eliminates the possibility of human error.

Accurate measurements are provided on all sizes of wire line from ½- to 1-inch. The counter will record accurately the depth position of the tool at all times and will automatically compensate for any raising of the tools as might happen when feeling for a pick-up or similar operation, it is claimed. The device is made up of the minimum number of strong parts.



The Cavins Depthometer

Adjustable Cutting Tool

ROBERT H. CLARK COMPANY

Robert H. Clark Company, 9330 Santa Monica Boulevard, Beverly Hills, California, has developed an adjustable blade counterbore and spotfacer, a feature of which is that the blades are adjustable to any diameter within the broad limits of the tools.

Also each of the interchangeable pilots is so designed that burrs are prevented from forming at the edge of the pilot hole, thereby avoiding "locked" pilots and the resulting damage to the tool and the work.

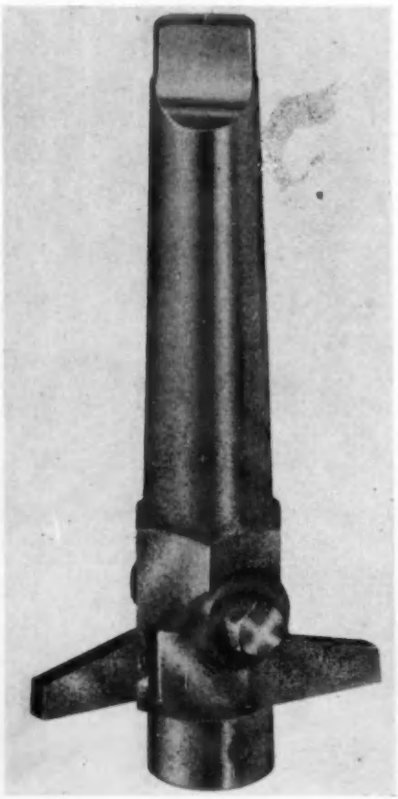
The complete range of eight sizes of the new counterbore and spotfacer covers all fractional and decimal diameters from 9/16-inch to 5½-inch in diameter. This adjustability assures the user a saving on tool inventory costs because each of these tools does the work of several fixed-radius counterbores. In addition, the cutting blades are removable for easy resharpening or replacement. No special technique or equipment is required to re-grind the blades to factory specifications.

The tool is equipped with TanTung blades, a tough, non-ferrous cast alloy for metal cutting. It is claimed that this alloy will successfully machine all kinds of rolled, forged, or cast steel, iron, aluminum, brass, copper, bronze and some hard materials formerly considered non-machinable.

Blades on the tool are mounted at an angle designed to prevent chatter and to provide a clean, true cut. The adjustable blades are braced against the body of the tool and are securely held in position. Shanks and pilots are hardened and ground.

In addition to performing counterboring or spotfacing operations between 9/16 and 5½ inches in diameter, these tools can be used for drilling any diameter hole up to 5½ inches to any depth without using fixed-sized drills except for drilling the first pilot hole. The tools may be used for engine lathes, milling machines, drill presses, turret lathes, jig borers, boring mills, automatic screw machines, and any spindle machines in which a boring bar can be used.

Each tool is packed with a wood crib block to protect the shank and blades during shipment and while in the tool crib when not in use.



Clark Adjustable Spotfacer and Counterbore

Texas Iron Works to Build Portable Rigs

Texas Iron Works, Houston, has purchased the rig division of the Portable Rig Company and will manufacture portables under the name of "T. I. W. Portable Rigs." H. Jeddie Pearce will continue as general manager of the T. I. W. and T. P. Bilbo, formerly assistant manager of Portable Rig Company will be assistant general manager of T. I. W., in charge of portable rig division.

Bucyrus-Erie Company Names Kansas Distributor

Bucyrus-Erie Company, South Milwaukee, Wisconsin, announces appointment of Gross Supply Company, El Dorado, Kansas, as distributors for Bucyrus-Erie oil-well spudders.

Gross Supply Company will handle Bucyrus-Erie 24-L and 36-L spudders in a territory which embraces all of Kansas except the counties of Stanton, Grant, Haskell, Gray, Meade, Seward, Stevens and Morton.

War Bonds Offered In Pump Name Contest

Fluid Packed Pump Company, Los Nietos, California, is offering six war bonds as prizes for pump names. The company makes oil-well pumps for every need. Because the company has always been noted for the fluid-packed type of pump, some confusion exists as to the correct name for the various pumps. The contest closes March 15.

East Texas Directory

The East Texas Oil Field Directory Company, Kilgore, Texas, has published its 1944 edition that carries complete list of operators in the East Texas and Hawkins fields, giving name and address of field superintendents along with number of leases and wells. An added feature involves classification directory of contractors, supply and service companies and all active refineries, gasoline plants and pipe lines.

Chain Drives

Morse Chain Company, Ithaca, New York, has released bulletin 43, a catalog giving specifications, price lists and new material covering advances and developments made in high-speed chain drives and other fields.

It includes a section on new and simplified methods of drive selection, engineering data covering chain and sprocket construction, and a list of stock drives based on a new, quick method of selection.

Controlled Flow

Pesco Products Company, 11610 Euclid Avenue, Cleveland 6, Ohio, has published a booklet called "Pressurized Power and Controlled Flow," which contains much informative material for design engineers and others concerned with improved methods of handling liquids and utilizing pump power in their products or processes.

SHIPS THAT CARRY SUPPLIES TO OUR BOYS ACROSS THE SEVEN SEAS

☆

. . . have been implemented by thousands of tons of Dedman castings used in making the vital parts of many kinds of war equipment . . . rudder stocks and winches for cargo vessels; vital units for war ships and airplane carriers such as big gun mounts, etc.

QUALITY ELECTRIC STEEL CASTINGS

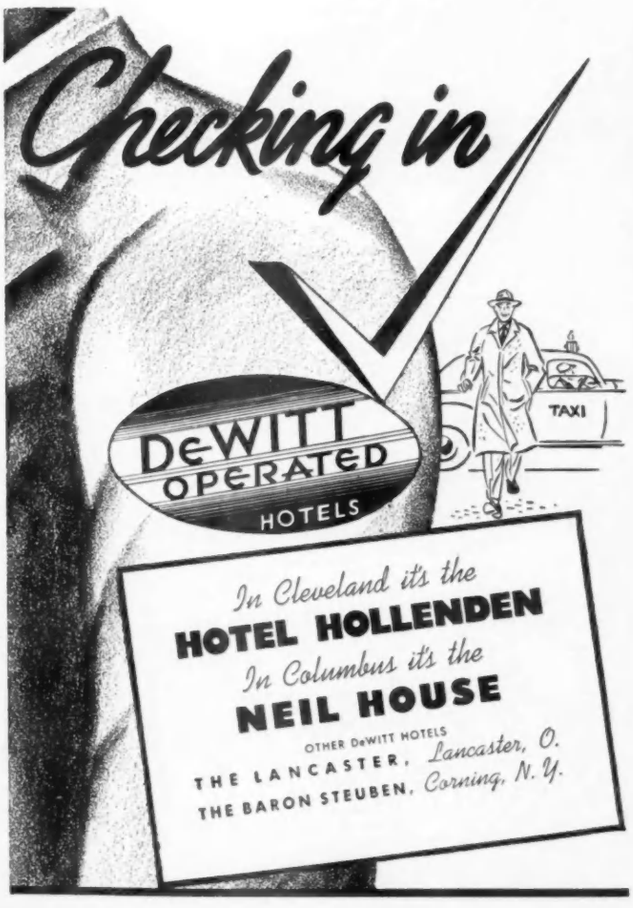
Dedman's outstanding war record is your assurance of superior castings for the rebuilding of a war-torn world after victory.

DEDMAN

FOUNDRY & MACHINE CO.

HOUSTON, TEXAS

☆ ☆ ☆ ☆



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HOUSTON, TEXAS LONG BEACH, CALIF.

ORBIT VALVES

The Valves that can "Take It"

ORBIT MASTER VALVE

The Orbit Master Valve is quick opening—has easy operation and a positive shutoff. A welded bonnet valve—insurance against possible gasket leaks.

•

YOUR ORBIT VALVES

will last for the duration. Meanwhile, if you have any questions regarding their care or maintenance, write us.

•

OIL WELL IMPROVEMENTS CO.

SINCE 1912

TULSA, OKLAHOMA

Men in the Industry's News

WALKER FRANKS, secretary of Gordon Oil Company, Mt. Pleasant, was elected chairman for 1944 of the Michigan API chapter. He succeeds Allen Morrow, Maguire, Inc., Mt. Pleasant. Other 1944 officers elected included Glen Sleight, Sun Oil Company, first vice chairman; William Schoeneck, Ohio Oil Company, second vice chairman; and William Schulz, Cities Service Oil Company, secretary-treasurer.

RUSSEL SMITH, formerly of Ventura, California, and Centralia, Illinois has been placed in charge of the Security Engineering Company office just opened in Odessa, Texas.

E. H. DIX, chief metallurgist and assistant director of research for Aluminum Company of America, discussed "New Developments in High-Strength Aluminum-Alloy Products" before the Tulsa chapter of the American Society of Metals meeting January 31.

JOE A. HALE, formerly secretary to the division manager of The Texas Company at Tulsa, has been made assistant division manager in charge of industrial relations. J. Howard Johnson, who has been chief scout, succeeds Hale in the secretarial position. Kenneth M. Heckman, who has been assistant to Johnson goes to Ardmore as scout, and Harold Green replaces Johnson as head of the Tulsa scouting office.

MERLE THORPE has been appointed director of business development for Cities Service Company, and has also been elected as a member of the board of directors. He recently retired as editor and publisher of Nation's Business magazine, and will assume his new duties with Cities Service Company immediately.

W. ARMSTRONG PRICE, consulting geologist, is opening an office in the Second National Bank Building at Houston in addition to his office at Corpus Christi.

C. E. BUCHNER, executive manager of the Independent Petroleum Association of America, addressed the Oklahoma City Geological Society February 3 on the position of the petroleum industry and the independent producer.

GLEN E. THOMPSON, tax and lease service consultant, has moved his office from Longview to the State National Bank Building, Texarkana.

FRED CHRISTANELLI, after 16 months service in the Army has returned to his former position with Baroid Sales Division of National Lead Company at Houston. During his military service, he spent 12 months in foreign service from Tripoli to Syria with the Signal Corps, and Special Service Division in Cairo, Egypt. He still remains a member of the enlisted army reserves.

FRED O. JACKSON, previously in charge of scouting for Phillips Petroleum Company, is now scout in the Shawnee area while Holgar Johnson, formerly stationed at Lafayette, Louisiana, has been moved to Bartlesville.

W. E. CRISWELL, 58, secretary and director of National Tube Company, died January 28, at Pittsburgh.

Natural Gas Men to Elect Officers Soon

Directors of the Independent Natural Gas Association, recently organized, have been announced as follows:

M. H. Adams, Wichita, Kan.; E. Buddrus, Chicago; R. L. Carr, New York; J. H. Dunn, Amarillo; A. B. Harper, Fort Smith, Ark.; D. D. Harrington, Amarillo; L. E. Ingham, Owensboro, Ky.; P. R. Johnson, Independence, Kan.; E. C. Joullian, Oklahoma City; Paul Kayer, El Paso; Oscar Nelson, Charleston, W. Va.; W. G. Skelly, Tulsa; W. H. Wildes, Dallas, and C. H. Zachary, Dallas.

R. B. Harkins of the Panhandle Eastern Pipe Line Company said that a meeting would be held soon to elect officers.

Celanese Starts Plant

Construction began January 27 near Bishop, Neuces County, Texas, by the Celanese Corporation of America of a plant to manufacture acetic acid, acetone, methanol, formaldehyde and other products obtained from the hydrocarbons extracted from natural gas. Completion is scheduled late this year.

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